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# INDEX TO THE MODERN HOSPITAL

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# THE MODERN HOSPITAL

*A Monthly Journal Devoted to the Building, Equipment, and Administration of Hospitals, Sanatoriums, and Allied Institutions, and to their Medical, Surgical, and Nursing Services*

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## MOUNT ST. MARY'S HOSPITAL AT NIAGARA FALLS, NEW YORK

### A New Hospital, Sanatorium and Hotel Combined—Includes All the Elements to Make for Efficiency, Convenience, Comfort and Pleasure of Patients and Rest Seekers—The Organ a Unique Feature in Hospitals


By SISTER M. CHERUBIM, Superintendent


AT the highest point in the city that takes its name from the world-famed Niagara Falls, stands Mount St. Mary's. Its windows and roof gardens command, on the one hand, magnificent views of the broad Niagara River in its majestic sweep towards the great cataract, while on the other hand the picturesque Niagara Gorge stretches away until, in the distance far to the north, silhouetted against the sky, may be seen the slender outlines of the Brock Monument crowning Queenston Heights. The entire surrounding region is replete with historic, scientific and poetic interest. The cataract, the river, the lakes, the adjacent country within a radius of thirty miles, are redolent of memories, some of them of national import, involving the fortunes of war, the results of extensive scientific explorations, or the triumphs of genius over nature. On a commanding eminence of this enchanted region looms Mount St. Mary's, like some huge castle on the Rhine, drawing admiring inquiries from sightseers roaming through a region where grandeur is almost commonplace. Scarcely anywhere else in America can be found a dozen miles of scenery so beautiful and unusual, so accessible, so full of historic interest and withal so quieting in influence and so marked with the mighty power of the Omnipotent.

Mount St. Mary's, in the midst of this wonderful setting, is primarily a hospital. But it is much more than a hospital, for a large share of the nearly six hundred thousand dollars invested in its buildings and equipment has been devoted to providing a recuperating place for those who, regardless of nationality or creed, are in need of a rest from nerve strain, or a change to perfect quiet from the busy rush incident to modern social and commercial life. One in search of quiet, upbuilding rest is almost unaware of the presence in the same building of a complete hospital, modern and up to the very latest minute in its equipment and service. This is due to the fact that in the plans for the construction of the great fireproof buildings special provision was made for the accommodation of guests whose restoration to health should call for perfect quiet and rest, plenty of air and sunshine, hygienic surroundings and careful attention to diet. So while the same building houses both, the hospital is practically completely shut off both from sight and sound, and the guest may stay a week or a month or longer and never come into contact with any unpleasant features of hospital life.

The moment one enters the wide vestibule at Mount St. Mary's one will note the spirit of quiet and restfulness which pervades the whole institution. The furnishings are rich but of a marked simplicity. The decorative effects throughout are in a harmonious combination of cream and Venetian red, the doors and other wood trimmings, which are small in amount, being natural-finish birch. The wholesome freshness of the atmosphere is due to the perfect system of ventilation, all of the air blown into the rooms being drawn from a stack nearly a hundred feet in the air and thoroughly washed by screening through a great air-conditioning machine.

The hospital, comprising a group of four fire-

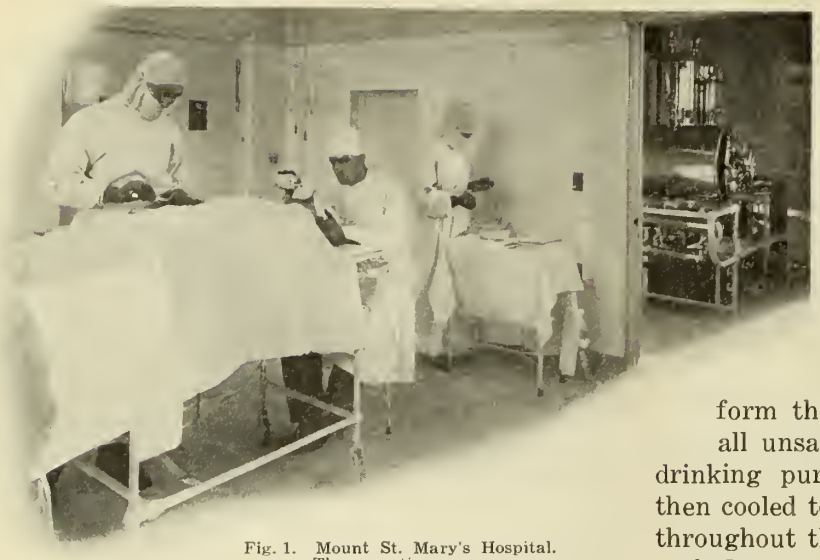

Fig. 1. Mount St. Mary's Hospital. The operating room.

proof buildings connected by means of arcades, is constructed of non-porous brick with stone trimmings. It contains seventy-five private rooms and ample ward accommodations.

The main central building, which contains the administration offices, consists of a ground floor basement, with six floors above. The north and south pavilions also have basements, with four floors above. To the rear is a service building consisting of a sub-basement, a ground floor and four floors above. Automatic elevator service carries one quickly to all the floors. The corridors are wide and airy. The stair halls are partitioned off from the main corridors, preventing the transmission of noise and odors. Off the arcades of each floor are located the foyers, which are available to the visiting friends of the patients; also the nurses' signal stations, where patients' calls for the nurse are silently registered by a lighting system; on each floor are located, likewise, the nurses' desks, telephones, auxiliary clocks, and similar accessories.

The lighting system throughout is indirect—by electricity—and patients may, without rising, turn the light off and on by means of a push button near the bed. Every room in the entire hospital has outside light. The private rooms are of goodly size, sound-proof, and with high ceilings, and arranged along the lines of high-grade apartments, thus lessening the possible gloom of the sick room. All suites and many of the single rooms have private baths and lavatories, and the wards are correspondingly equipped.

The ventilation system provides special air intakes, cleaning all incoming air by screening; the active circulation of air through the operating rooms is assured at all times by an independent ventilating system. It is possible to warm or cool the building, as may be desired, and within reasonable limits to control the humidity.

It is doubtful if any other restorium in the country is so well equipped from the standpoint of sanitation as Mount St. Mary's. The walls and ceilings are painted; the floors, which are of tile and almost noiseless, are curved up to form the baseboard, thus doing away with all unsanitary corners. Water supplied for drinking purposes is distilled and oxygenated, then cooled to about 38 degrees F. and circulated throughout the building to drinking fountains on each floor.

The plan of the wards is known as the unit type; each floor in itself is essentially a complete, self-contained hospital, having all the necessary rooms and facilities for ministering to the comfort of the patients. There is one thing about Mount St. Mary's that cannot be over-emphasized—its newness in everything. Not only is its structure and exterior built along the newest and latest architectural lines, but its inner equipment includes the latest productions in surgical and hospital appliances and apparatus. Examine, for instance, a single ward and you will find that every object in it has been built, selected and installed with special care to serve a special purpose. You will notice that the wards are so built and the beds so arranged that there is a window between every two beds; and on the north side of the ward building there are large open-air porches accessible to both bed patients and convalescents. To each bed is allotted 1,200 cubic feet of air space.

Fig. 2. Mount St. Mary's Hospital. The chapel.

The springs and mattresses have the latest mechanical devices, which permit the raising of the patient's head without his noticing it. There is a drop light over each patient's bed; and the "silent call system" is installed for signaling the nurse in attendance. The latter is summoned by light instead of bells, and the signal cannot be extinguished except by the switch at the patient's bed. The utility rooms adjoining the wards on each floor are so arranged as to minimize the time required by the nurse for the performance of her necessary duties, thereby assuring the greatest amount of personal care for the patient. They contain a complete equipment for the steam sterilization of the ward utensils, etc., as well as a steam drying closet and blanket warmers. Dressing rooms are provided on each floor to which bed patients may be taken for special dressings or examinations.

Fig. 4. Mount St. Mary's Hospital. Palm room and sun parlor.

The operating rooms, which are on the fifth floor, contain a modern surgical plant, sterilizing and supply rooms, etherizing and recovery rooms, doctors' and nurses' scrub rooms, instrument and sink rooms and a dressing room with shower bath, metal lockers, etc., for surgeons, all of which may be entered from the main corridor and which lead to either of the two operating rooms.

The operating plant is remote from the remainder of the hospital. It occupies a special floor, separated from the floors below by an enclosed stairway and elevator shaft. The isolated position of this part of the hospital insures privacy to the patient, the absence of all disturbance to the operator, and the immaculate cleanliness and aseptic condition which is essential in rooms devoted to major surgery. Off the arcade on this floor is the x-ray department with its waiting room, its diagnosis and treatment room, dark room, and a room for the storage of plates and records.

A fully equipped emergency operating department, with its accessories, opens into a corridor apart from the main hospital corridor. The ambulance entrance, adjoining the emergency surgery, is arranged independently of the public entrance to the hospital, and is so located as to eliminate publicity and conserve the strength of the patient by giving direct access to the emergency and treatment rooms for the reception of ambulance cases. On this floor also are the rooms provided for the treatment of alcoholic patients. This department, with its accessory dependencies, is entirely shut off from the main corridor and has a separate entrance.

Unusual care is given to proper diet. The foods are prepared in kitchens comprising the most advanced sanitary equipment by chefs skilled in dietetics. The department includes a large main kitchen, a small diet kitchen for the preparation of delicacies, a bakery, store rooms, and separate refrigerators for meat, fish, vegetables, milk, butter and eggs. The refrigerators are cooled by coils from the refrigerating plant, and thus no foods come in contact with ice vapors. Niagara Falls is the center of the great Niagara fruit belt and the fresh products of the farm are brought in daily. The diet kitchens, or serving pantries, are centrally located on all floors above the general kitchen and are connected with it by electric dumbwaiters. Very elaborate apparatus has been provided for disinfecting and sterilizing, even each pantry having a machine for sterilizing the dishes and tableware. The most scru-

Fig. 3. Mount St. Mary's Hospital. The organ loft of the chapel.

Fig. 5. Mount St. Mary's Hospital. A ward.

pulous attention to cleanliness is everywhere observed.

On the main floor are located the public waiting rooms, reception halls, offices and auxiliaries; record room, with vault and accessories, library and consultation room for attending physicians. On this floor, too, besides the regular private rooms, are a day room for convalescent patients, a pharmacy, with an electric dumbwaiter communicating with all floors above, and an observation room where patients pending diagnosis are kept under observation and later distributed to the wards as may be directed. The main corridor of this floor, as of all floors throughout the entire institution, opens into sun parlors for the use of private room patients.

On the second floor is the beautifully exposed room for the care of children, opening out on a sun veranda.

The fifth floor opens into a roof palm garden. Here guests may gather in large numbers; informal entertainments are held here. From the three roof gardens, as from the many windows of the large solarium, are to be had charming views of Niagara's wonderful scenery. Access to these gardens is obtained by direct elevator service from each floor.

On the sixth floor, off the arcade, are located the laboratories, with conveniences and apparatus for careful and accurate study. This location has been selected with the object of getting rid of the disagreeable features attending scientific research, and at the same time obtaining the needful light and the desired seclusion for successful work. On this floor is the nurses' class room and recreation hall, with direct elevator service, and entirely segregated from the hospital department.

The maternity department is located in the eastern section of the central building, as far as possible from the main corridors.

The service building has been planned with no less care than the buildings in which the patients are housed. Besides a sub-basement, which is primarily the boiler and engine room and ice plant, with space required for the apparatus connected with them, it has a basement and four stories above. It contains a model laundry equipment, with steam washers, centrifugal extractors, "conveyor," dry room and a variety of modern finishing devices. Adjoining the main work room is a special receiving room for material requiring preliminary disinfection. There is also a large steam and formaldehyde disinfecting chamber for clothing and mattresses. Store rooms, fan rooms, dining rooms, etc., are located on this floor. Corridors

Fig. 6. Mount St. Mary's Hospital. Bathroom of a private suite.

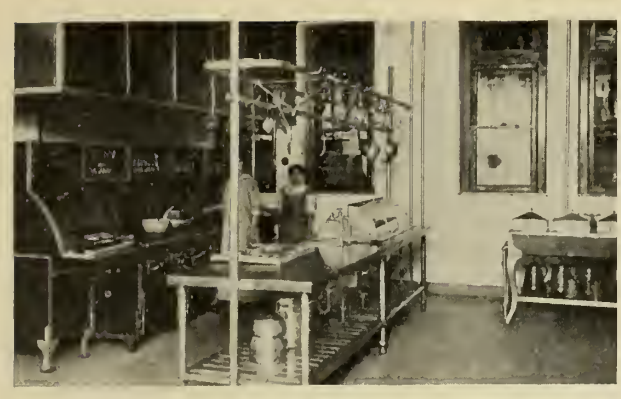

Fig. 7. Mount St. Mary's Hospital. The kitchen.

connect with elevators, and any department desired can be reached directly without crossing through or interfering with any intervening department.

The nurses' home and training school, declared to be one of the most beautiful and best equipped of its kind, is a separate building. The training school has room for sixty students. It already has a large waiting list of applicants.

It was with full appreciation of the remarkably soothing effect of music upon the mind and nerves of hospital patients that provision was made, in the planning of the building, for the installation of the famous Choralcelo organ.

This wonderful musical instrument, the first of its kind ever installed in such an institution, marks a distinct epoch in the history of music. It produces the first faultlessly pure tone the human ear has ever heard. Through it for the first time in all the ages Nature finds her full voice, for it is she, literally, who makes its tonal marvels. By the agency of electricity a periodic tension is produced in the ether in the vicinity of the string, reed, bar, diaphragm or other sonorous body which is to be made to sing, and this body sympathetically and without contact gives off a synthetic tone all of the parts whereof are purely Nature's work, and therefore perfect. When in this manner a string speaks the result is all the harmonies which can concordantly coexist, and to produce any particular instrumental effect one has only, as it were, to chip off the required portion of this great synthetic mass of tone. Though the tones are many of them sustained, like the organ, they are radically different in all other respects, suggesting rather an idealized orchestra.

The tones are warm and passionate, free from that coldness which invariably characterizes even the most beautiful wind tones; and as the sound is electrically controlled, every possible gradation of quality and loudness is readily obtained. The Choralcelo player mixes his tonal colors as an artist mixes his hues upon his palette. He may, as it were, pull the whole of a stop, or any part of it, and he does not have to produce his soft tones by smothering loud ones in a swell-box. The low tones of the Choralcelo are elemental, its middle range jubilant, its upper register thrilling, and the whole effect celestial, whence its name, Choralcelo—Celestial Choir. So varied are the capabilities of this epochal instrument that it not only has the flexibility, range and volume of a great pipe organ, but it produces also violin and piano music, either separately or together, giving the latter case the effect of a great and etherealized orchestra.

The Choralcelo at Mount St. Mary's consists of a master instrument and eight subsidiary instruments, or "echoes," as they are called, placed in various parts of the building, so that at will the organist may flood with celestial harmony the entire structure, or any selected part thereof, and produce the most entrancing antiphonal effects.

This wonderful instrument, which gives Mount St. Mary's a distinctive position among all similar foundations in this country, originated with Mr. Melvin L. Severy, of Boston, and is the culmination of scientific work extending over more than a quarter of a century. It is the last word in tone and the herald of an entirely new musical dispensation.

At Mount St. Mary's will be found every form of comfort and entertainment that tends not only to restore vitality and build up health, but that will make one's stay here a period to look back upon with great satisfaction and pleasure. While not a hotel in the strictly commercial sense, Mount St. Mary's provides more of the necessary comforts and needs of those whose health requires upbuilding than may be found in most of the modern hotels or sanitariums.

Mention of Mount St. Mary's would be incomplete without a word concerning the chapel. The splendid marble altars were built in Rome. Their pure white and gold and the dark mahogany of the pews form a contrast of wondrous harmony in the subdued light of the beautiful memorial windows.

A bond issue including $125,000 for improvements at the Kansas City General Hospital was passed at an election held June 1, by a majority of nine votes for to one against the proposition. The money will be expended for two new wings to the hospital, one for the housing of interns and nurses, and the other to serve as a special ward for the treatment of genito-urinary diseases and drug addictions. This move is only a part of Kansas City's general scheme to add to her municipal hospital facilities. The Emergency Hospital is being remodeled and enlarged, and in the future will include a tuberculosis clinic and the necessary laboratory services. A new tuberculosis sanatorium, being erected at a cost of $150,000, will soon be opened, and efforts are being made by prominent women of the city to raise funds for the establishment of two convalescent homes in connection with the general hospital.

## SIMPLIFICATION AND STANDARDIZATION OF SURGICAL TECHNIC IN HOSPITALS

### Uniformity in Procedure Makes for Better Results; Better Training for Surgeons, Interns and Nurses; Economy in Apparatus and Energy—A Set of Rules and House Orders

By W. L. BABCOCK, M. D., Superintendent the Grace Hospital, Detroit

A SEARCH through the attics and store rooms of the older general hospitals of the country develops the fact that these rooms constitute the graveyards of great quantities of discarded operating room equipment and a variety of surgical appliances and instruments that the surgeon of the younger generation would have difficulty in identifying. These museums of an early day are receiving constant additions of a character that lend interest to the statement that not all of the equipment stored therein ever justified its existence. Many instruments and much equipment was experimental and exhibits a constant reaching out after better material, more serviceable surgical tools and much ingenuity in mechanical adaptation. If these collections were brought together, it is probable that the exhibit of discarded operating room tables alone would tax the capacity of the Smithsonian Institution.

As new operations have been planned and described, new instruments and equipment have appeared, until the material stock inventory of a well equipped hospital represents the expenditure of many thousands of dollars. It can be demonstrated that many hospitals have suffered financially from the whims and fads of surgeons in the matter of equipment. Most hospital superintendents of not many years' experience can recall many items of expenditure for apparatus and equipment which was used but once or never used at all.

Standardization of the work of various departments of general hospitals has been a subject of close study in many institutions for the past two or three years. A considerable advance has been made in the standardization and purchase of supplies through a central purchasing bureau, which has its office in New York City and is known as the Hospital Bureau of Standards and Supplies. Forty of the largest general hospitals of the country are members of this Bureau and control its organization through an executive committee. A saving of many thousands of dollars per year to the hospitals of the country and the establishment of a uniformity of quality and grade in supplies has resulted.

The hospital with which the writer is connected has an exceedingly large and active surgical service. From six to thirty major operations per day, or about five thousand per year, are carried out, together with the necessary minor work and dressings that follow. Six operating rooms are busy six days in the week for an average period of four to six hours. A large surgical staff is connected with the hospital and in addition outside physicians, whose surgical training qualifies them for the work, are permitted to operate on private patients. A diversity of methods, technic and equipment has resulted. In years past surgeons visiting the Mayo clinics or the clinics of New York, London, Berlin or Vienna, would return with a variety of new methods and frequently suggest new equipment for trial. A closed hospital with its limited attending staff can readily put into practice uniform methods of work that soon become characteristic of the hospital. The more numerous points of contact from the surgical department of the open hospital and the lack of unity in the methods of its operators has resulted in much confusion and many unnecessary expenditures. A candid statement of this subject brings out the confession that the situation as detailed has not made for efficiency.

No departments of hospital work have been managed with less efficiency from the standpoint of cost and uniformity than the surgical departments of general hospitals. It is known that many large general hospitals carry out in their operating service several technics concurrently. Naturally this diversity in operating room methods makes it necessary to carry a large variety of surgical material and supplies, much of which is interchangeable. For example, many general hospitals sterilize rubber gloves both by dry heat and by boiling, according to the preference of the operator. Catgut, horsehair, silkworm gut, silk, kangaroo tendon, etc., are used for one and the same purpose at the whim of the operator. Vaginal and local operations are frequently carried out in one and the same operating room on the same day by both the dry and the wet methods. The use or non-use of sterile fluids or antiseptic solutions in irrigating designate the method.

The benefits accruing from the standardization of operating room technic has resulted, where introduced, in much saving of time and in greater convenience to the surgeon. "We waste the time of our nurses when we require them to learn a dozen different ways to do their work in the operating room or in the wards because we have not discovered or outlined the one best way of doing the work and adopted it as a standard method of

procedure." The hospital, therefore, is not the only agency benefited by uniformity in methods.

In order to carry the efforts toward uniformity and simplicity to their logical conclusion, it is necessary in a general way to provide the following:

1st. The adoption of a brief outline of "house orders" for the preparation of the patient for operation.

2d. The adoption of an outline for the uniform care of the patient following operation.

3d. The adoption of uniform operating room methods for the preparation and sterilization of cotton, gauze, ligatures and general supplies.

4th. The adoption of a uniform surgical technic by the surgeons in all general operative cases.

The outlines or schedules adopted should be printed and brought personally to the attention of all surgeons operating in the hospital. The methods and technic necessarily should be methods that have been tried out and found safe and satisfactory in actual practice.

With the above generalizations in view, the surgical staff and superintendent of the Grace Hospital last year, after many weeks of study and experimentation, adopted schedules for the surgical work of the hospital. The following suggestions to operators were agreed upon by the attending surgical staff, put into practice, and called to the attention of all other surgeons operating in the hospital:

That all surgical patients, save emergency cases, be sent to the hospital as early the day preceding operation as possible.

That in abdominal operations all operators dispense with gauze sponges for use in abdomen and use only the large gauze towels. Loss of sponges in the abdominal cavity will be obviated by the use of towels, and the operator will soon become accustomed to their use.

That small sponges never be used in the abdomen except on a sponge holder.

That gauze drainage be dispensed with.

That cigarette drains or rubber tubes, enclosing wicking be used.

That irrigators and basins containing solutions be dispensed with in the operating room.

That gloves be worn dry.

That the only solution used in the operating rooms shall be dilute alcohol.

That 20 minutes be allowed to prepare room for next operation.

That the preparation of the skin for any operation be carried out by sponging with 3 percent solution of iodine.

That operators shall report in operating room 15 minutes prior to operation and be prepared to operate on schedule time.

That irrigation in vaginal cases be discontinued.

That in operations on cervix and perineum the vagina be sponged only with 2 percent solution of iodine.

That operators lock their instrument cases and lay out instruments only with the help of the instrument nurse.

That operators furnish their own rubber gloves, except for use in staff operations.

That the operating room supervisor be notified the day previous of special material or supplies needed for operations.

That physicians do not talk or congregate in rotunda or visit in the operating room corridor.

That physicians be on time for use of dressing room.

That lay visitors and relatives of patients be not admitted to operating room floor or operating rooms except in emergencies.

That the keynote of technic be simplicity.

That whims and fads be abandoned.

That operating room technic be standardized.

*Standard scrub for hands and arms.* Scrub with soap and water two minutes, trim nails to 1 m. and then scrub with soap and water 5 minutes; finish with dilute alcohol. Dry hands and use gloves dry with sterile powder.

The surgical staff adopted a schedule of standing "house orders" which were put into effect at once, as follows:

## THE GRACE HOSPITAL STANDING HOUSE ORDERS

### ADULT CASES ONLY—PREPARATION OF PATIENT FOR OPERATION

Castor oil, 1 ounce at once, except cases of intestinal obstruction or acute appendicitis.

Temperature per mouth, at four-hour intervals in acute cases. If doubtful, then take temperature per rectum.

Pulse and respiration, at four-hour intervals in acute cases.

Shave entire region of operation, giving wide margin; follow with hot bath.

Only fluids for the evening meal.

Send specimen of urine to laboratory.

### LOCAL PREPARATION OF REGION OF OPERATION

Wash with soap, warm water and sterile gauze 5 minutes, using three changes of warm water. Rinse with sterile water.

Wash for 2 minutes with 50 percent alcohol on sterile gauze.

Apply sterile, dry dressing, covering whole area and strap in place with one-inch strips of adhesive plaster.

Vaginal cases to have 2-quart warm water douche with ½ percent Tri-Kresol.

### MORNING OF OPERATION

Simple suds and water enema if bowels have not moved well.

Only water by mouth before operation.

Adult patients to receive one-half hour before operation 1-6 gr. morphia and 1-150 gr. atropin hypodermatically unless otherwise ordered.

Urinalysis on chart before time of operation.

Rinse patient's mouth with antiseptic solution and clean teeth with sterile gauze or tooth brush before time of operation.

The nurse shall see that all female pelvic and abdominal cases voluntarily empty bladder 15 minutes before leaving for operating room. If not voluntarily emptied, then catheterize unless otherwise indicated upon the chart by surgeon. Male patients shall not be catheterized unless special orders are written on chart by attending or house surgeon.

If the physician in charge of the patient, or an intern acting for him, shall write "House Orders," name and hour

of operation on patient's chart, the above orders shall be carried out. Orders other than the above shall be written in full detail.

CARE OF PATIENT FOLLOWING OPERATION

The anesthetist shall accompany patient to the bed and before leaving shall see that he or she is in a fair way towards recovery from the anesthetic.

The bed shall have been previously warmed.

All hot water bottles shall have been removed from the bed when patient is returned from operating room.

The nurse shall remain until patient is conscious.

Morphine 1-6 gr. hypodermatically; one dose only may be given to adult patients if necessary to control pain. Thereafter morphine shall not be administered without a physician's order.

Water (hot or cold) may be given as patient requests in quantities tolerated.

Only water or weak tea shall be given in the first 24 hours.

Fluids shall be gradually increased in the second and third 24-hour periods as may be borne by the patient. In the second 24-hour period broths and other liquids may be added.

*Vomiting*—A nurse shall attend the patient to care for vomited material and make the patient comfortable.

In cases of persistent vomiting, rapid pulse, high or low temperature, the house and attending surgeons shall be notified. In case the attending surgeon cannot be reached, the house surgeon shall wash out stomach.

Gas and mild grades of intestinal paresis shall be relieved by an enema consisting of a pint of suds and water.

These rules do not apply to nose and throat, eye and ear, and special operations.

The above "House Orders" were adopted by the Surgical Division of the Attending Medical Staff, December 19, 1914.

These schedules have been in use several months and have greatly simplified the work of the nurses in preparing patients for operations and in the after care of surgical cases. It is true that not all surgeons have as yet fully adopted all of the suggestions made in the schedules. Many who did not originally conform to the schedules have since followed the outline after observing the good results and increased simplicity of the standard routine.

The personal observance of the simplified technic in actual practice should have a tendency to produce a good psychical effect on the fussy operator, especially coupled with the knowledge that these simple methods are followed with excellent results from a surgical standpoint. The occasional operator, as well as the surgeon who is not a member of the staff, have been benefited in their work by the inauguration of simplified and sane methods of procedure.

I wish to emphasize that this standard outline applies only to general surgical operations, such as abdominal work, amputations, head injuries, etc., and does not apply to special operations on the eye, ear, nose and throat and certain genito-urinary operations. From the standpoint of the hospital it is saving many hours of time for the intern and nurse and many dollars in supplies. The experiment has demonstrated that this uniformity can be extended to other departments of hospital work, such as the laboratory and x-ray departments, and, to a limited extent, to the medical departments. As an illustration of the increased simplicity, it is necessary only to detail that, in order to have a patient prepared for an abdominal operation, the surgeon simply writes "House Orders" and the date of the operation on the patient's chart.

## NEW YORK HOSPITALS GET FUNDS

**Hospital Saturday and Sunday Association Makes Distribution of More Than $100,000 to Forty-one Hospitals**

The following table gives in round numbers the amounts received by hospitals in this association on the new basis of distribution which takes note of the cost, within the conservative limits, as well as the number of free days of service:

GENERAL HOSPITALS

| | | | |
|---|---|---|---|
| Mt. Sinai | $9,519 | Flower | $1,334 |
| New York | 8,061 | Sydenham | 1,302 |
| St. Luke's | 7,490 | French | 1,068 |
| Post-Graduate | 5,898 | Hahnemann | 1,047 |
| German | 4,783 | St. Mark's | 1,001 |
| Roosevelt | 4,746 | Knickerbocker | 885 |
| Lebanon | 2,952 | Volunteer | 400 |
| Lincoln | 2,868 | Har Moriah | 362 |
| Beth Israel | 2,624 | Red Cross | 250 |
| Polyclinic | 1,755 | | |
| Total | | | $58,355 |

SPECIAL.

| | | | |
|---|---|---|---|
| Orthopedic | $4,648 | Knapp Memorial | $ 370 |
| Ruptured and Crippled | 2,959 | Skin and Cancer | 1,658 |
| Deformed and Joint Disease. | 914 | General Memorial | 1,495 |
| Eye and Ear Infirmary | 1,903 | House of Rest | 2,148 |
| Man. Eye, Ear and Throat. | 1,825 | Neurological | 250 |
| Ophthalmic | 757 | | |
| Total | | | $18,931 |

WOMEN AND CHILDREN

| | | | |
|---|---|---|---|
| Lying-In | $4,498 | Woman's | $1,970 |
| St. Mary's | 2,685 | Sloane | 1,433 |
| Infirmary for Women and Children | 2,095 | Man. Maternity | 983 |
| Babies | 2,037 | Misericordia | 734 |
| Nursery and Child's | 1,572 | Jewish Maternity | 374 |
| | | Hospital for Women | 363 |
| Total | | | $18,749 |

INCURABLES AND CONVALESCENTS

| | | | |
|---|---|---|---|
| Montefiore Home | $9,525 | Isabella Heimath | $1,327 |
| Home for Incurables | 1,956 | St. Andr. Conv. | 281 |
| Holy Comforter | 871 | | |
| Total | | | $13,963 |

### Legal Hurdles

They are having a great time in England in their attempts to carry out the Workman's Compensation Laws. Recently it was decided by the court of last resort that if an employee worked for more than one employer during the time the disability was in course of acquisition, as for instance miner's nystagmus, the last employer could compel all the other employers for whom the man worked to contribute pro rata toward the award of disability compensation. Now one of these several employers has come into court with the claim that in his colliery, because of its sanitation and safety conditions, the employee could not have contracted that disease. The trial court had come upon a new problem "at law," and sent the case below for trial on this particular issue.

"How shall we try the case?" asked one of the counsel.

"Do the best you can," naively replied the court.

## DR. GRENFELL'S WONDERFUL WORK IN LABRADOR

### Five Hospitals and a Hospital Ship Now Help to Cure the Sick, Heal the Hurt and Teach Sanitation and Hygiene

By S. EMMA DEMAREST, Executive Secretary of the Grenfell Association of America

THROUGH Dr. Corner's able article in your magazine on "Hospital Work on the Labrador Coast," your readers have become somewhat familiar with Dr. Grenfell's mission work, especially with that of Battle Harbor Hospital. I would like to mention some other phases of the work which show how, in a brief score of years, by unwearied efforts, by sympathetic understanding of existing conditions, by fair-mindedness and prophetic vision, Dr. Grenfell has assisted in developing the social, economic, educational and religious life of these isolated people, and has been the means of bringing medical aid and instruction in sanitation to those who before his coming never had an opportunity to test the power of medicine and surgery.

There are now five flourishing small hospitals connected with our Mission—three situated at points of vantage about two hundred miles apart along the Labrador coast, and two on the northern Newfoundland coast.[1] All of the Mission work naturally seems in a way to center about St. Anthony, for Dr. Grenfell lives at St. Anthony and the inspiration for all sorts of effort in many directions emanates from him.

Our largest hospital, with the noted surgeon, Dr. John M. Little, Jr., of Massachusetts, is located at St. Anthony. This hospital is open all the year. Here in the summer months the Harvard Odontological School maintains a laboratory and a specialist in dentistry from July 1 to September 1. This hospital has a well-furnished pathological laboratory. It is also equipped with an x-ray outfit. It is to this hospital that most of the noted specialists come for the summer months. Dr. Andrews, a noted oculist, has for the past four summers given his services and is planning to return the coming season. Dr. John D. Adams of Boston, an orthopedic specialist, performed some wonderful operations and cures last summer.

The anti-tubercular work is carried on in tents and shacks as well as open-air balconies. This is true of all the hospitals.

The hospital returns for the year 1914 show:

PATIENTS TREATED AND CARED FOR

| | Cases |
|---|---|
| Out-patients | 6,855 |
| In-patients | 490 |
| | 7,345 |

MEDICAL AND SURGICAL WORK DONE

| | |
|---|---|
| Out-patients (visits) | 12,317 |
| In-patients (days hospital care) | 10,313 |
| | 22,630 |

OPERATIONS UNDER ANESTHETICS

| | |
|---|---|
| Out-patients | 41 |
| In-patients | 198 |
| | 239 |

AVERAGE STAY OF AN IN-PATIENT IN HOSPITAL

| | |
|---|---|
| Days | 21.05 |

MISSION RESPONSIBILITIES WHEN ALL HOSPITALS WERE OPEN

| | |
|---|---|
| Average out-patients per day | 62.32 |
| Average in-patients per day | 39.07 |
| | 101.39 |

The Orphanage, or Children's Home, at St. Anthony, built by a young volunteer while he was still in college, who recently married the daughter of the President of the United States, accommodates about sixty orphans and children from destitute homes, of whom Dr. Grenfell has assumed the care. They are a happy, hearty lot of youngsters and improve rapidly under the gentle care of the good women who have them in charge.

The Strathcona. Dr. Grenfell's hospital ship.

St. Anthony is also the headquarters of the educational and industrial as well as the medical part of the Mission. The only public and undenominational school is established here. The day school is in session the entire school year, and the

[1] There are also cottage hospital stations on the Labrador at Forteau and Spotted Islands.

The hospital at St. Anthony, Northern Newfoundland. Dr. John M. Little, Jr., surgeon, in charge.

teacher for the past two years has held a night school for the older young men and young women. In the summer months a kindergarten class taught by a volunteer has revolutionized the lives of the smallest children by teaching them to play —something hitherto unknown to them.

For several years teachers have given their services to schools in the out-ports of Labrador and Newfoundland. Last year schools were held in six little centers where there had never before been schools. These teachers sometimes have to teach as many grades as there are pupils in the school. Board is found with some native family. These native houses are very small and accommodations are somewhat pinched at times. One of our young men who is about six feet tall said that his cot completely filled the side of his room from wall to wall and he was obliged all summer to lie doubled up, jack-knife fashion. We hope the coming summer to send teachers to a dozen settlements.

Tuberculosis shack, St. Anthony.

Thanks to the indefatigable enterprise and zeal of Miss Jessie Luther, of Providence, R. I., a volunteer worker for many years, classes in textile industry have been established. The output of these classes is so excellent that the woolen rugs and homespun cloth woven by the girls and women have taken prizes in open competition in St. John's. Beside the weaving, Miss Luther also teaches basketry, carving, and modeling in clay. There is a small but complete pottery, with potter's wheel and kiln, and there is plenty of clay in the neighborhood. A sale of articles made under the guidance of Miss Luther was held a few weeks ago in New York. Many friends attended and all were very enthusiastic over the fine workmanship displayed. The rugs especially met with high praise and commendation. An expert buyer from one of the largest carpet houses in the city examined the rugs and this firm offered to take for sale all that can be made under Miss Luther's direction. The homespun cloth, too, met with favor, many men purchasing it for suits.

Through the kindness of Pratt Institute some of the older boys of our Mission have had a technical education and have returned to be our electricians, plumbers, carpenters, house-builders, etc.

A co-operative lumber mill at Roddickton provides employment for men and boys during the winter months and saves many from hunger and debt when fishing and hunting fail. Windows and doors for the new Mission buildings are made at this mill, and many vessels designed by our boys have been built and sold and after launching they have been granted the bounty for a sound craft by Lloyd's surveyor at St. John's.

Tuberculosis tent, St. Anthony.

The co-operative stores, though not a part of the financial responsibilities of the Mission, are certainly valuable for their influence in developing the thrift of the people. The lessons of cash trading are nowhere in the world more needed. At stations miles apart small centers for cash dealings are doing well.

Indian Harbor Hospital. Fresh Air Shack.

Dr. Grenfell's practice lies over two thousand miles of fog-laden, badly charted, rock-bound coast. He covers this distance in his little hospital steamer, Strathcona, at least once, and often twice every summer. It would be difficult to magnify the amount of work accomplished in this way or to exaggerate the value of Dr. Grenfell's services. Through the "tickles," as the narrow straits are called, down into the fiords, across stormy, ice-covered bays goes the steamer on her errand of mercy and healing. Sometimes these touch-and-go visits of the Strathcona afford the sole opportunity many of the "liveyeres" have to secure medical or surgical aid. The approach of the Mission ship is hailed by the fishing fleet with the greatest enthusiasm. The trapboat dancing over the waves shouts or signals her a welcome. The inhabitants of the little settlements along the coast, on the arrival of Dr. Grenfell, hasten to the

Harrington Hospital, Labrador.

Pilley's Island Hospital.

landing place to meet him. The work done, the aid given, the comfort and cheer carried to these remote corners of the earth cannot be calculated. Patients are taken to the Strathcona, or Dr. Grenfell goes ashore. Serious cases are taken aboard the Strathcona and hurried to St. Anthony or Battle Harbor. This hospital ship is without doubt one of the most important factors in the

The reindeer rug.

work. The string of hospitals, St. Anthony, Battle Harbor, Indian Harbor, Harrington, are the fingers, the Strathcona is the thumb, of the helping hand taking so much light and cheer to these isolated fisher folk.

In St. John's, Newfoundland, there now stands the realization of Dr. Grenfell's dream for his brother seamen. When the seamen, sealers and fishermen visited St. John's every year they had no satisfactory place to board or lodge during their stay. A place was needed where these men when on shore would receive a hearty welcome and enjoy wholesome entertainments, where they could "kill time" comfortably and peacefully and be free from the many temptations of saloons and evil resorts. Right in the midst of the busiest wharves and docks, within easy access of all steamers, is built the Seamen's Institute, which has so soon amply proved its need by the large patronage it has received from the day it first

Indian Harbor Hospital.

splendid work among the Labrador fishermen, begun by one inspired man, has grown to dimensions of international importance.

In order to give permanence to Dr. Grenfell's work and to lift from his shoulders a burden too heavy for any one man to carry, about a year ago the International Grenfell Association was incorporated under the laws of Newfoundland. This Association is to provide funds for and to administer the various activities of the Mission. It consists of two representatives or directors from each of the following associations: the Royal National Mission to Deep Sea Fishermen, of London, England; the Labrador Medical Mission of Canada; the Newfoundland Grenfell Association; the New England Grenfell Association, and the Grenfell Association of America.

In the fall things looked very dark for the upkeep of the Mission. Of the countries helping to support this great philanthropy the United States is the only one not engaged in war. Even from here funds came in very slowly, for the war affected business and dividends were in many instances unpaid. Many friends who were in the habit of making generous donations were obliged to curtail their gifts or found themselves unable to give at all. In order to economize to the maximum, Dr. Grenfell shut up four of the hospitals for the winter months to save the expense of heating. This made it necessary for the

opened, December 19, 1912. It has more than paid its running expenses. Especially popular have been its restaurant, bowling alleys, billiard room, library and reading rooms. The swimming pool, too, has been an untold blessing, for in this land, inhabited pre-eminently by fisher folk, the art of swimming has been an unknown accomplishment; the waters were too cold to permit of their learning to swim. Just at present the government recruits are having their first lessons in swimming. Dr. Grenfell says, "Once men were satisfied with telling other men they 'ought to be good'; now we know Christ meant us to have the fun of making it easier not to go to saloons and haunts of evil by providing better places for them." Under the management of a board of prominent ladies the upper floor of the Institute provides a home at a moderate price for girls and fishermen's wives while visiting the city or seeking employment. This department, too, has been very popular and has closed the year free from debt. This

The Summer Staff at St. Anthony, 1914. From left to right—Standing, Drs. Adams, Ashland, Alton, Grenfell, Little, Janney, Andrews and Mr. Martin; and on the extreme right, kneeling, Dr. Mallett. Nurses—Misses Alexander, Root, Dorsey, Bowen, Bates, and seated on the ground, Miss Rogers and Miss Leininger, with Jack, of Ice-Pan fame.

doctors and nurses to take long dog-sled journeys to the homes of their patients. The school-house also was closed, school being held in the Orphanage.

Our New York office sent a considerable amount of money for immediate relief. We are glad to say that funds are coming better of late and the outlook is much brighter. In a note received from the Doctor recently, he says there was a very late catch of fish, a larger catch than is usual in the early season, and the people, who had been threatened with starvation because of the failure of the earlier catch, are now more comfortable.

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## ADVANTAGES OF COOPERATIVE PURCHASE OF SUPPLIES FOR STATE HOSPITALS THROUGH A CENTRAL COMMITTEE[1]

### Superintendents of the Institutions Forming a Purchasing Bureau Are Held Responsible by Their Own Boards—Uniform Requisition Forms Make for Simplicity and Allow Comparisons—Some Forms That Have Been Found Serviceable

By ARTHUR P. HERRING, M. D., Secretary Maryland Lunacy Commission

An excellent feature of the methods of purchase adopted by the cooperative purchasing committee of the State of Maryland consists in the fact that the superintendents of the various institutions form the purchasing committee and are held responsible by their respective boards for the careful and economical purchasing of supplies. Supplies are purchased quarterly, with the exception of coal, which is purchased during the month of April for the ensuing year. Coal is bought on the British thermal unit (B. t. u.) basis, as determined by the Bureau of Mines, Washington, D. C. This coal must come up to a certain standard. Any variation, either above or below the standard, controls the price, the hospital paying a premium if the coal is better than specified, or receiving a rebate if the coal is not up to the standard. If there is any marked reduction in quality, the coal is returned and the contract is annulled.

The following schedule has been arranged as being the most convenient way for grouping the supplies for quarterly purchasing:

For the quarters beginning June, September, December, March: groceries, laundry supplies, paints and oils, rubber goods, curled hair, tobacco, cigars and pipes.

For the quarters beginning July, October, January, April: dry goods, house furnishings, drugs and chemicals, tin shop supplies, engineer's supplies, broom shop supplies, furniture.

For the quarters beginning August, November, February, May: notions, blacksmith's supplies, hardware and carpenter's supplies, clothing, boots and shoes, leather and shoe findings.

In November Christmas supplies also are purchased.

Requisitions for articles included in any of the above classifications required for the quarter are sent to the office of the purchasing committee on the fifth of each month. (See Form 6.) Upon the receipt of these requisitions from each institution, Form 9, known as a total sheet, is prepared, on which are entered all the different articles (by specification numbers) for convenience and accuracy, the amount required by each hospital and the total of each item estimated. From this total sheet there is then prepared on Form 3 a request to bidders containing the items upon which the firms are to bid, giving the specification number and the name of the article in brackets, but without a full description, and the total quantity wanted, with the unit to be used. The name of the institution does not appear on this sheet.

For the purpose of illustration, a few items of groceries may be considered. Printed specification sheets have been prepared and placed in the hands of the bidders, which describe fully each article in order that the bidder may know exactly what he is to bid on. Each article is given a specification number, for instance, under Groceries, No. 1a refers to "Sugar (fine granulated)", No. 2a, "Coffee (Bourbon Santos)," etc.

Each institution is furnished from this office with a full set of specification sheets covering every classification, and is always required to order articles by specification numbers, which greatly expedites matters and insures uniformity. Each institution also has a copy of the schedule governing the purchase of supplies, and each month upon a given date it must send to the cooperative purchasing committee a list of the articles required as supplies for the next three months. The list of articles under the different classifications is very large, and is intended to cover every supply that has been used or will be

[1]This is the fourth in a series of eight papers on "The Government of State Hospitals for the Insane"; last month, "The Business Organization"; next month, "Organization of the Domestic Departments."

required in the hospitals. If, however, an article is wanted by the hospital which does not appear on the specification sheets, such articles may be

SPRINGFIELD STATE HOSPITAL PRESS
Form No. 6.

**REQUISITION**

December 3rd. 1914.

NAME OF HOSPITAL EASTERN SHORE STATE HOSPITAL
CLASSIFICATION GROCERIES
QUARTER BEGINNING January 1st. 1915

ORDER BY SPECIFICATION NUMBERS ONLY
USE CORRECT UNIT

CO-OPERATIVE PURCHASING COMMITTEE,
Room: 512 Garrett Building,
Baltimore, Md

Gentlemen:
The following items of GROCERIES will be needed by this Institution for the quarter beginning January 1st, 1915.

| Specification Number | QUANTITY | UNIT | DESCRIPTION Brand, Sizes, Numbers, Lengths, How Packed, Etc. |
|---|---|---|---|
| 1a. | 700 | lbs. | |
| 2b. | 100 | lbs. | |
| 3a. | 25 | lbs. | |
| 9. | 1 | Case | |
| 61b. | 2 | Bble. | |

Form 6. This Requisition is used by each institution to notify the Co-operative Purchasing Committee of the amounts required for the quarter, using the specification number for each item. These amounts are then entered on Form 9 and totaled.

described fully on the requisition blank, in a column for the purpose, the specification number being left blank, for a specification number to be supplied in the office, and added to the specifications.

In order to explain the system further let us begin with the requisition known as Form 6. These

TOTAL SHEET

Form 9.

COOPERATIVE PURCHASING COMMITTEE.

CLASSIFICATION: GROCERIES.

QUARTER BEGINNING: January 1st. 1915.

| Specification No. | NAME OF HOSPITAL | AMOUNT FOR EACH | TOTAL |
|---|---|---|---|
| 1a. | Springfield | 23000 lbs. | |
| | Spring Grove | 9000 lbs. | |
| | Rosewood | 5000 lbs. | |
| | Crownsville | 2400 lbs. | |
| | Eastern Shore | 700 lbs. | 40100 lbs. |
| 2a. | Rosewood | 1000 lbs. | 1000 lbs. |
| 2b. | Springfield | 6500 lbs. | |
| | Spring Grove | 2900 lbs. | |
| | Crownsville | 600 lbs. | |
| | Eastern Shore | 100 lbs. | 10100 lbs. |
| 3a. | Springfield | 450 lbs. | |
| | Spring Grove | 700 lbs. | |
| | Rosewood | 90 lbs. | |
| | Crownsville | 10 lbs. | |
| | Eastern Shore | 25 lbs. | 1275 lbs. |
| 9. | Springfield | 9 cases | |
| | Spring Grove | 15 cases | |
| | Rosewood | 2 cases | |
| | Crownsville | 21 cases | |
| | Eastern Shore | 1 case | 48 cases |
| 61a. | Springfield | 150 bbls. | |
| | Spring Grove | 180 bbls. | 330 bbls. |
| 61b. | Rosewood | 20 bbls. | |
| | Eastern Shore | 2 bbls. | 22 bbls. |
| 61c. | Springfield | 50 bbls. | |
| | Spring Grove | 100 bbls. | 150 bbls. |
| 61d. | Crownsville | 6 bbls. | 6 bbls. |

Form 9, the Total Sheet, indicates the gross amount of each item, as well as the amount for each institution. It is only the gross amounts that appear on Form 3, which is sent to the trade; the names of the institutions not appearing.

requisitions are made out by the stewards, who always use the specification number and state the number of pounds, cases, barrels, gallons, etc., required; they are sent to the office of the purchasing committee, where the total sheet, known as Form 9, showing the total number of pounds, barrels, or cases wanted by each hospital, and the grand total, is prepared. From this sheet is prepared and sent out a request to bidders, Form 3, for use in submitting their bids. The full set of

Form No. 3.

CO-OPERATIVE PURCHASING COMMITTEE
OF THE
STATE INSTITUTIONS FOR THE INSANE AND FEEBLE MINDED

DR. J. PERCY WADE, Chairman
DR. A. P. HERRING, Secretary
ROOM 512 GARRETT BUILDING

SPRINGFIELD STATE HOSPITAL
SPRINGFIELD STATE HOSPITAL
ROSEWOOD STATE TRAINING SCHOOL
CROWNSVILLE STATE HOSPITAL
EASTERN SHORE STATE HOSPITAL

December 12th, 1914.

Johnson Grocery Company,
745 W. Madison St., Baltimore, Md.

Gentlemen:
Please render us your quotations on the items below, not later than December 21st, 1914 at 12 o'clock noon, in the form and subject to the conditions named on first sheet and in conformity with requirements of Specification Sheet hereto attached

NOTE: Read SPECIFICATIONS and INSTRUCTION SHEET carefully and make your BID in strict accordance therewith.

Respectfully,
Co-operative Purchasing Committee,
Secretary,
512 Garrett Building.

| Specification Number | ARTICLE | Quantity | UNIT | PRICE | AMOUNT |
|---|---|---|---|---|---|
| 1a. | Sugar: (Granulated) | 40100 | lbs. | | |
| 2a. | Coffee: (Bourbon Santos) | 1000 | lbs. | | |
| 2b. | Coffee: (Rio No. 1) | 10100 | lbs. | | |
| 3a. | Tea: (Black) | 1275 | lbs. | | |
| 9. | Hominy Grits: (Pearl) | 48 | Cases | | |
| 61a. | Flour:(Spring Patent) | 330 | Bbls. | | |
| 61b. | Flour: (Spring Patent) | 22 | Bbls. | | |
| 61c. | Flour: (Winter Straight) | 150 | Bbls. | | |
| 61d. | Flour: (Winter Straight) | 6 | Bbls. | | |

Form 3 is mailed to the bidders, upon which they enter their unit price and total amount for each item. Awards are made on each item and never as a whole. Attached to Form 3 are the Specification Sheets, describing in detail the articles desired. Each article is numbered and is referred to by number, instead of the name, i. e., 1a (Sugar), 2b (Coffee), etc. The sealed bids are returnable within ten days on Form 3, with specification sheets attached and the guarantee signed. The prices are then tabulated and the awards made by the committee.

papers going to the bidders consists of the following: A form which gives the rules governing the bids and instructions to aid the bidder to conform to our system. A form is also sent which is in the nature of a guarantee that the bidder will, if required, furnish to the cooperative purchasing committee a bond, with good and sufficient sureties satisfactory to the committee, to guarantee that he will furnish all goods in accordance with the specifications. In Form 3, above referred to, the bidder enters his price opposite each item. The specifications frequently ask for a certain brand of goods or its equal, and in order that it may be known what brand the bidder is bidding on, a column is prepared for that purpose. If this is left blank, it is assumed in each instance that he is bidding on the article specified. By referring to Form 7, tabulation sheet, which represents an

Classification: Groceries.
Date: December 21st, 1914
Sheet No. .....

CO-OPERATIVE PURCHASING COMMITTEE
TABULATION SHEET

Form 7.

| Specification Number | Article | Quantity | Unit | Johnson Grocery Co. | A. C. Brown & Sons | D. L. Smith & Bro. | G. Brown & Co. |
|---|---|---|---|---|---|---|---|
| 1a | Sugar (Granulated) | 40,100 | Lbs. | 05 | 0480 | 0472 | 052 |
| 2a | Coffee (Bourbon Santos) | 1,000 | Lbs. | 105 | 123 | 093 | 114 |
| 2b | Coffee (Rio No. 1) | 10,100 | Lbs. | 09 | 10 | 095 | 0975 |
| 3a | Tea (Black) | 1,275 | Lbs. | 18 | 14 | 15 | 12 |
| 9 | Hominy Grits (Pearl) | 48 | Cases | 1 40 | 1 37 | 1 38 | 1 375 |
| 61a | Flour (Spring Patent) | 330 | Bbls. | 5 85 | 5 90 | 5 92 | 6 00 |
| 61b | Flour (Spring Patent) | 22 | Bbls. | 6 05 | 6 08 | 6 10 | 6 07½ |
| 61c | Flour (Winter Straight) | 150 | Bbls. | 4 90 | 4 95 | 5 00 | 4 98 |

Form 7, or "tabulation sheet," showing bids received for various supplies.

actual bid, it will be seen, for example, what prices the Johnson Grocery Co. bid for specific brands.

A full set of specifications accompanies each set of papers placed in the hands of bidders, so that bidders can at once determine the class and brand of goods required, how they are to be packed, etc., and the unit to be used. For illustration, although 350 lbs. is reckoned as the average barrel weight of sugar, sugar is purchased by the pound, the pound weight of each barrel being always understood to vary more or less, when billed to each institution. On coffee, the unit is pounds in 100-pound bags. Tea is also bought by the pound, packed in 45-pound chests; hominy grits are bought by the case, there being 60 pounds in a case of pearl hominy grits, or 12 five-pound packages. Flour is bought by the barrel price, packed in either sacks or wood. If in sacks, two 98-pound sacks are reckoned to a barrel, and, if in wood, 196 pounds net.

After all bids are in, tabulations are made of each classification. See tabulation sheet (Form 7.)

Form No. 4.

CO-OPERATIVE PURCHASING COMMITTEE
OF THE
STATE INSTITUTIONS FOR THE INSANE AND FEEBLE MINDED

DR. J. PERCY WADE, Chairman.
DR. A. P. HERRING, Secretary.
ROOM 512 GARRETT BUILDING.

SPRING GROVE STATE HOSPITAL
SPRINGFIELD STATE HOSPITAL
ROSEWOOD STATE TRAINING SCHOOL
CROWNSVILLE STATE HOSPITAL
EASTERN SHORE STATE HOSPITAL

Baltimore, Md., Dec. 22nd, 1914.

Johnson Grocery Company,
745 W. Madison St., City.

Gentlemen:

This is to advise that your firm has been awarded the contract for the following articles of GROCERIES as per your bid submitted December 21st, 1914 We give you below the name of the Hospital and the amount each is to receive and the price, as per your bid submitted. Each article to conform in every way to sample and specifications. Send your bill to each Hospital direct

Yours very truly,
Co-operative Purchasing Committee,
Secretary,
512 Garrett Building,

Shipping Instructions:
Each Institution will notify you when and how to ship

| Specification Number | Total Quantity | UNIT | Name of Hospital | Quantity for each | Price |
|---|---|---|---|---|---|
| 2b. | 10100 | lbs. | Springfield<br>Spring Grove<br>Crownsville<br>Eastern Shore | 6500 lbs.<br>2900 lbs.<br>600 lbs.<br>100 lbs. | .09 lb. |
| 61a. | 330 | bbls. | Springfield<br>Spring Grove | 150 bbls.<br>180 bbls. | 5.85 bbl. |
| 61b | 22 | bbls. | Rosewood<br>Eastern Shore | 20 bbls.<br>2 bbls. | 6.05 bbl. |
| 61c. | 150 | bbls. | Springfield<br>Spring Grove | 50 bbls.<br>100 bbls. | 4.90 bbl. |
| 61d. | 6 | bbls. | Crownsville | 6 bbls. | 5.10 bbl. |

Form 4 is to notify the successful bidder that he has been awarded the contract to furnish certain supplies to the institution named, also the quantity and price of each article.

The awards are made by the superintendents and the successful bidders are notified on a form for that purpose that they have been awarded certain articles of groceries. On this form, the specification number, the total quantity, the unit and the name of the hospital, with the quantity for each hospital and the price, are given. Each institution is also notified, on another form, which successful firms have been awarded the contract for such items of groceries as the institution has asked for. Again the specification number is used, with the quantity, the unit, and the name of the firm and the price given. Each hospital, upon receipt of the notification from the office that the awards have been made, orders its supplies on triplicate blank forms; the first sheet goes to the vendor, a duplicate of this (on a blue sheet) is filed in the office of the hospital and a triplicate (on a pink sheet), *without* the *quantity* or *price*, but simply showing the specification number and name of article, is sent to the hospital store-room. All of the three blanks have the same number. When the supplies are received in the hospital store-room, the store-keeper weighs or measures and enters the amounts on the pink triplicate sheets, which are returned to the office of the book-keeper, who checks them up with the invoices and with the original order (blue sheet) to see if the amounts agree. All corrections are made from the office of the purchasing committee.

Supplies are issued from the store-room only upon written requisitions, which are then sent daily to the book-keeper, who enters the amounts in a stock ledger book, or more properly a daily receipt and disbursement account, which shows daily or monthly the amount of stock received, the amount issued, and the quantity still on hand.

If the supplies purchased are not kept up to the specifications, the office of the cooperative purchasing committee is notified and it at once takes up the question with the firms supplying the articles and makes the necessary adjustments. Samples of the supplies purchased are kept in the office of the committee until the goods are delivered and found upon inspection to be up to standard.

Some of the forms of blanks used have been omitted because it is not practicable to present them in reduced form.

Fig. 1. Venereal Hospital, Cleveland. An old asylum for the insane, made over.

## OLD BUILDING TRANSFORMED INTO A VENEREAL HOSPITAL

### Structure Originally Built as Asylum for the Insane Worked Over at Small Expense—Some Problems and Their Successful Solution—Individual Basins and Toilets and Shower Baths

By HOWELL WRIGHT, Superintendent Cleveland City Hospital, Cleveland, Ohio

THE first units of a $3,000,000 group of buildings for a new city hospital for the city of Cleveland have been completed. These include an administration building, a service building, a nurses' home and a laundry building.

The old nurses' home, a great, three-story, L-shaped affair, was built more than thirty years ago, to house the insane. Its outer walls, of brick, were two feet thick; the corridor walls eighteen inches; and partition walls, dividing nearly all the space in all three stories of the building into small cells, seven by nine feet, were nine inches thick. Heavy iron bars were built into the structure of all windows.

When this building was transformed into a nurses' home ten or twelve years ago, the window bars were filed off, and a sufficient number of the cell partitions were knocked out, making arch-shaped openings to transform three cells into two small bed chambers and a small sitting room, as shown in Fig. 2.

The matron and training school officers were housed in some small reception rooms at either side of the front entrance. A general parlor or waiting room was made of the front hall, and a large alcove made facing the front entrance.

The main kitchen of the institution was in the basement, at the bend of the "L," and occupied a space about 20x30 feet. A similar amount of space at the same point was set apart on the first and second floors for the nurses' dining rooms, and part of the wide corridor was taken for a dumbwaiter and a small service room for each dining room. There were three toilets with bath on each floor; one at either extreme end of the building and one near the bend of the elbow, as shown in Fig. 2. The floor plans also show the breaking up of the cells to accommodate two nurses in each suite.

When it became no longer necessary to use this building for a nurses' home, it was planned to pull it down and remove it, as was being done with other buildings, to make space for the new hospital group. This building, however, was so massive and in such good general repair, that it was believed that it might be used for some hospital purpose at least for the next few years; the more so, because it happened to be located at a point that would not obstruct the new group.

The city of Cleveland has no venereal disease hospital. The private hospitals have declined to accept these cases, and although the present city hospital has had a department in which a large number of these patients have been cared for during the past few years, its overcrowded condition and its limited space have not enabled it to take care of any substantial proportion of these cases offered for treatment. And yet it was felt

that these are among the most important diseases of a community, and that in the interests of public health they should be segregated and given efficient, aggressive and prompt care.

Under these conditions, it was finally decided that the old nurses' home could be, in some way, transformed into a workable venereal disease hospital. But there were some apparently insurmountable obstacles. The members of the medical staff were quite determined that it would be inexpedient to house venereal patients in a building unless appropriate plumbing equipment could be installed to allow each patient a separate lavatory and a separate toilet. It would cost in the neighborhood of $20,000 to instal this plumbing equipment, and even then, the solid brick walls everywhere would make it necessary to run the plumbing out in the open. The cost, alone, of this plumbing was prohibitive, and the character that the new plumbing must assume was objectionable.

As necessity is the mother of invention, we solved our problem by removing all lavatories that had been used for nurses, and by installing in their place a series of deep kitchen sinks with a single goose-neck outlet for each, controlled by foot pedal movement; one pedal for hot water and one for cold, the two located so close together

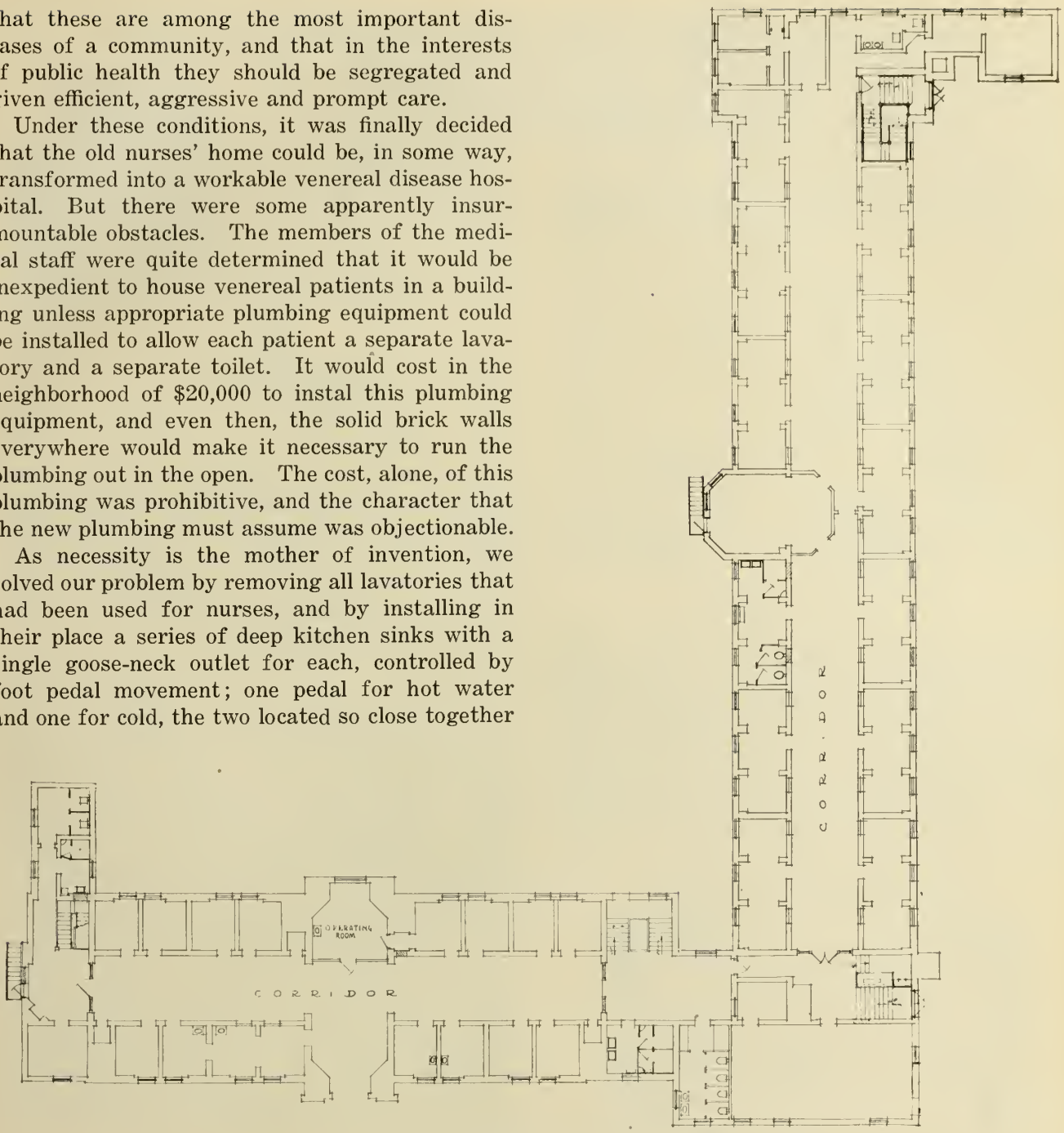



Fig. 2. Venereal Hospital, Cleveland—First floor plan.

that one foot could determine the temperature desired. In this way it is expected that patients can wash themselves without infecting anything. Two showers have been installed for full baths for all patients, no tubs being used. Bed patients are given bed baths. Individual linen and cotton towels may be used, each patient having his own, or paper towels may be used in their place.

The difficulties of individual toilets were a greater problem; this was solved in the manner shown in Figures No. 3 and No. 4. The toilet seat was removed, and in its place was left merely a rod running across the back of the porcelain bowl. A toilet seat was made for each patient, up to the total number of beds to be occupied. A flat, hook-shaped plate was screwed on the under side of each seat, as shown in the detail in Figure 3. Wall racks were made of galvanized metal, with a space or shelf for each seat, and provision for locking each of these shelves was made as indicated in Figure 4. Each toilet seat and each shelf and each lock and each key is numbered, and the key fits only its own lock. The locks are fastened to the cabinet by a loose chain.

The technic of the operation is as follows: each patient has his own key, unlocks his own shelf

and removes his own toilet seat when it is needed, and returns it again and locks it in.

An orderly has a master key that fits all the locks and each day it is part of his duty to remove and clean with an antiseptic solution the toilet seats and also to clean the rack and all of its shelves.

In order to meet the fire necessities, and under the direction of the fire and building departments

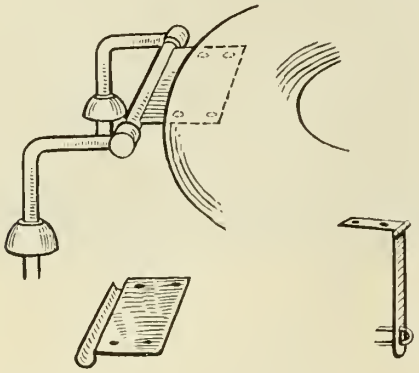


Fig. 3. Method of attaching seat.

of the city, it became necessary to put in extra fire stairs as shown in Figure 2: one at each end of the building and one at the bend of the elbow. It will be noted that outside fire ladders are also shown at two points. There is a third outside fire ladder at the end of the corridor at the top of the "L." Including these inside fire stairs and nine heavy automatically working corridor fire doors,

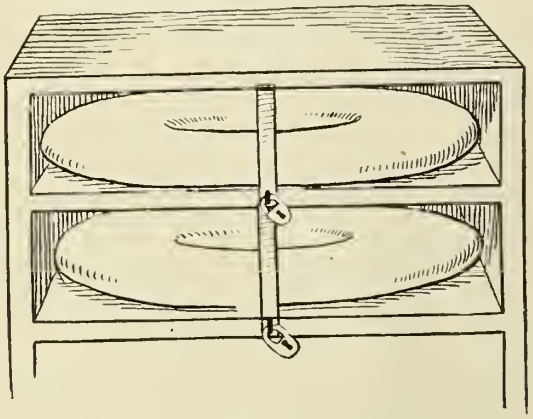


Fig. 4. Method of locking shelves.

allowing the building to be separated into three different parts in case of fire, the whole cost of the reconstruction was less than $10,000; and this included also, a transformation of the reception room opposite the front entrance into a very conveniently arranged operating room, with anesthetizing room adjoining. Small utility and sterilizing rooms have been placed next to the bath rooms in the three sections of the building.

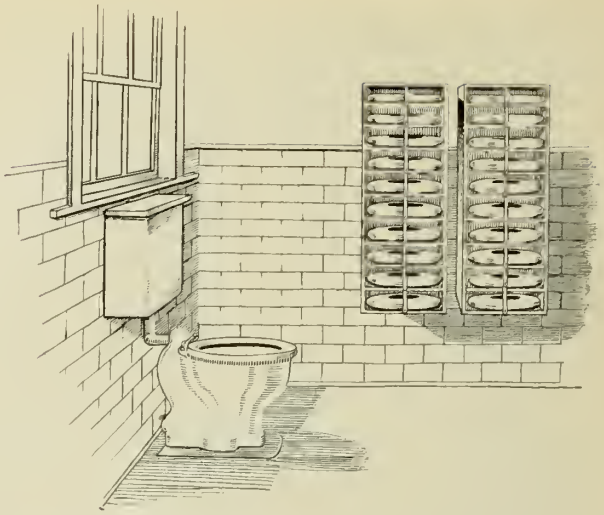


Fig. 5. Toilet room, showing toilet seat rack.

There were many difficulties in the way of making this building habitable, and more especially for the requirements of so special an institution as a venereal hospital, but it is believed that the obstacles have been surmounted and that we have now a perfectly workable, conveniently arranged hospital building.

### Columbia-Harvard-Johns Hopkins Staff for New British Field Hospital of Over 1,000 Beds

The laurels being won by volunteer American surgeons in England and on the continent will be multiplied by this staff sponsored by three of our leading universities. Sir William Osler, professor of medicine at Oxford, conceived the idea of having the surgeons for this new field hospital selected by men with whom he had been professionally associated when at Johns Hopkins. It met with Lord Kitchener's approval, the universities were cabled, and their offer to send 32 surgeons and 75 nurses was accepted by the General Director of the English Army Medical Corps.

Another American field hospital, a duplicate of those used in the American army, recently left Paris for the front. Three Americans, whose identity is not divulged, were the donors of the twenty tents and equipment to France. Six of these tents are of sufficient size to accommodate 200 wounded. Columbia and Harvard Universities, and Amherst, Williams and Washington State Colleges are represented among the volunteers comprising its ambulance staff.

### Japanese Hospital in Paris

A recent issue of *Le Journal* refers to this hospital in the Avenue des Champs Elysées as a corner of the Far East brought by the Japanese Red Cross to Paris. Dr. Shiota, professor of clinical surgery in the University of Tokio, is in charge with a staff of doctors, nurses, dispensers and assistants, numbering thirty, and the hospital is said to be excellently organized. The complete installation, including bedding, drugs, dressings, surgical instruments and sterilizers, was brought from Japan. There are three beautifully equipped operating rooms, a dental service and the latest appliances for radiography and radioscopy. There can be do doubt that the cooperation of the Japanese, American, English and French hospital staffs in Paris will result in a better appreciation of each other's qualities.

# A PLEA FOR SIMPLIFIED LABORATORY REPORTS FOR HOSPITALS

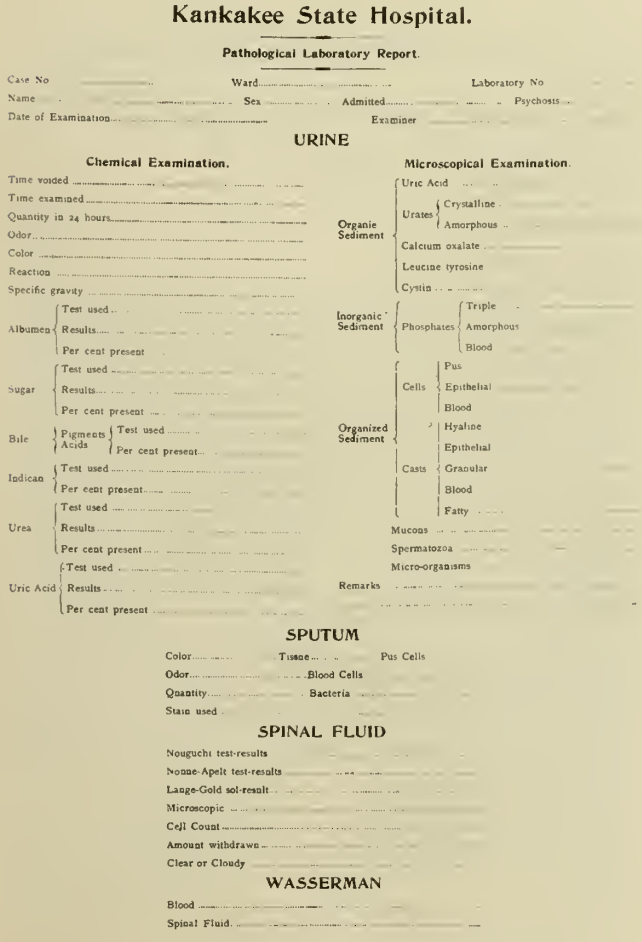
## Single Sheet for All Forms Has Advantages of Safety From Loss and Less Bulky Character of Case Records

By HOWARD T. CHILD, M. D., Pathologist, Kankakee State Hospital, Kankakee, Illinois

IN considering the various records of hospitals throughout the country, those pertaining to the department of pathology have been seriously neglected. It is only within the last decade that a special department under a trained physician has been adopted by the most progressive of our hospitals.

While I do not desire to say that the clinical laboratory of any hospital should be relied upon wholly, irrespective of the medical men on the staff, I do wish to emphasize the important fact that a distinct and manifest cooperation must exist between these two departments of a hospital.

In the diagnosis of a case the sum total of all findings, clinically, and those of such nature as are


Kankakee State Hospital.

Pathological Laboratory Report.

Case No ... Ward ... Laboratory No ...
Name ... Sex ... Admitted ... Psychosis ...
Date of Examination ... Examiner ...

URINE

Chemical Examination.

Time voided
Time examined
Quantity in 24 hours
Odor
Color
Reaction
Specific gravity
Albumen — Test used / Results / Per cent present
Sugar — Test used / Results / Per cent present
Bile — Pigments — Test used / Per cent present; Acids
Indican — Test used / Per cent present
Urea — Test used / Results / Per cent present
Uric Acid — Test used / Results / Per cent present

Microscopical Examination.

Organic Sediment: Uric Acid; Urates — Crystalline, Amorphous; Calcium oxalate; Leucine tyrosine; Cystin
Inorganic Sediment: Phosphates — Triple, Amorphous, Blood
Organized Sediment: Cells — Pus, Epithelial, Blood; Casts — Hyaline, Epithelial, Granular, Blood, Fatty; Mucous; Spermatozoa; Micro-organisms
Remarks

SPUTUM

Color ... Tissue ... Pus Cells
Odor ... Blood Cells
Quantity ... Bacteria
Stain used

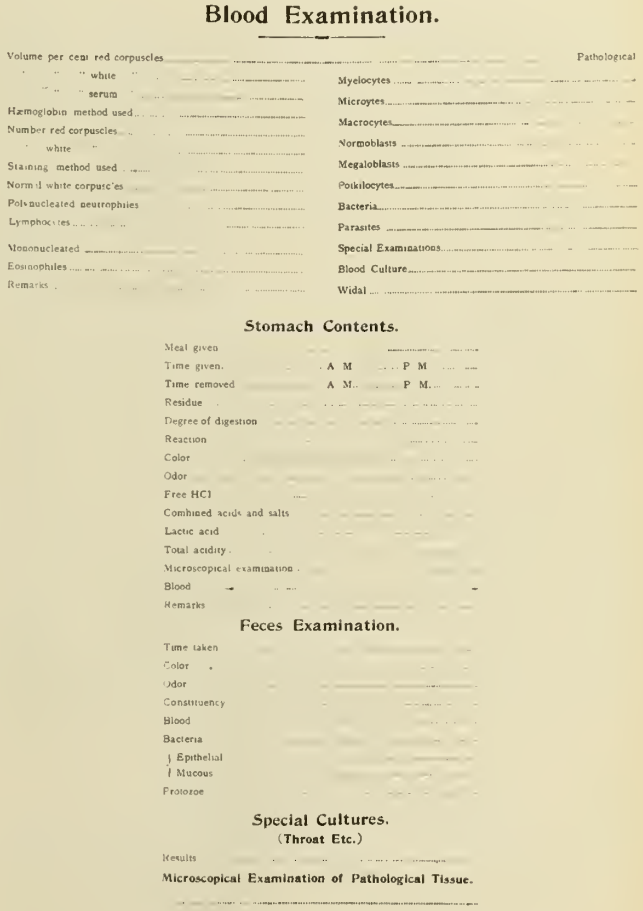
SPINAL FLUID

Nouguchi test-results
Nonne-Apelt test-results
Lange-Gold sol-result
Microscopic
Cell Count
Amount withdrawn
Clear or Cloudy

WASSERMAN

Blood
Spinal Fluid

Fig. 1. Pathological laboratory report form.


Blood Examination.

Volume per cent red corpuscles ... Pathological
" " " white "
" " " serum
Hæmoglobin method used
Number red corpuscles
" white "
Staining method used
Normal white corpuscles
Polynucleated neutrophiles
Lymphocytes
Mononucleated
Eosinophiles
Remarks

Myelocytes
Microcytes
Macrocytes
Normoblasts
Megaloblasts
Poikilocytes
Bacteria
Parasites
Special Examinations
Blood Culture
Widal

Stomach Contents.

Meal given
Time given. A M ... P M
Time removed A M ... P M
Residue
Degree of digestion
Reaction
Color
Odor
Free HCl
Combined acids and salts
Lactic acid
Total acidity
Microscopical examination
Blood
Remarks

Feces Examination.

Time taken
Color
Odor
Constituency
Blood
Bacteria
Epithelial / Mucous
Protozoe

Special Cultures.
(Throat Etc.)

Results

Microscopical Examination of Pathological Tissue.

Fig. 2. Reverse side of report form shown in Fig. 1.

determined by laboratory tests, should be carefully considered, both in justice to the patient and to the reputations of the hospital and of the physician to whose care the patient is entrusted.

How shall such findings be recorded? Some hospitals maintain that a special sheet for each examination made in the laboratory be filed, such sheets being of distinctive colors. To illustrate: a white sheet may be used for urinalysis, a blue one for gastric contents examination, a yellow colored sheet for blood tests and count, a purple sheet for sputum, and so on. I am of the opinion, however, that such a system of records is unsatisfactory; there is danger, where several laboratory examinations have been made during the period of the illness, of losing one of the sheets pertaining to a case, and thus missing a link in the record of the progress of the disease. This is especially true in cases of mental diseases, some of which extend over many years. A second objection to this plan is that it makes the history of the case too bulky, especially in chronic cases.

What, then, shall we adopt as a suitable permanent record sheet for our cases, which will overcome these objections? At the Kankakee State

Hospital I devised the accompanying scheme for the reports from the department of clinical pathology. This consists of a record printed on white paper, 11 inches long by 8½ inches wide, which conforms with the size of all history files. The two sides of the paper are used, which provides space for recording the results of the following laboratory examinations: urinalysis; sputum; spinal fluid; Wassermann tests of both blood and spinal fluid; blood, including cell count; stomach contents; feces; and special cultures, as from throat and discharging wounds, etc. In addition there is space for recording the results of any microscopical examination of pathological tissues.

At the top of the front page space is allotted for the name of the patient, case number, laboratory number, sex, date of admission, date of examination and psychosis, together with the name of the examiner.

The illustrations show the character of the examination made and the schedule adopted. I would add that the records of spinal fluid and Wassermann test results were placed on the front page in order to enable the person looking for the data which are so important in so many of the cases admitted to state hospitals, to determine at a glance whether or not there is laboratory evidence of syphilis existing.

In conclusion let me say, first, that much space is thus saved in bulky history files; second, that the entire laboratory examination, from a clinical standpoint, is covered on the one sheet of paper; third, that the danger of losing a special examination sheet, which may have an important bearing on the prognosis of the case, is minimized.

The result of adopting the foregoing form of record should enable one to determine what line of treatment is needed, and what instructions should be given the attending nurse relative to special diet and exercise in any particular case.

## MEAT EXTRACTS, PROPRIETARY PREPARATIONS AND BEEF, WINE AND IRON[1]

### Original Liebig Formula for Extracts Still the Best—Nutritive and Physiological Value of These Products—Adulterants—Beef, Wine and Iron Delusive as to Value for Food or Medicine

By JOHN PHILLIPS STREET, Chemist Connecticut Agricultural Experiment Station, New Haven, Conn.

PAPER IV

THE use of meat extract as a dietary adjunct dates back to the time of Hippocrates. The first publication relating to it was by Geoffroy, in 1730. During the next hundred years a number of French chemists gave the subject special study, but it was not until in 1847, when Baron Justus von Liebig published his classical studies on meat, that meat extracts became widely known. Following the suggestions of Liebig's work, Max von Pettenkofer devised a method for preparing the extract, which was admitted into the Bavarian Pharmacopœia in 1856. This method was used by a company acting under Liebig's authorization in South America, where a plentiful and cheap supply of cattle was obtainable. The name "Liebig's Extract," first applied to this preparation, is now given to many extracts differing greatly from the original preparation in composition, properties and method of manufacture. The English courts have decided that the name "Liebig's Extract" is public property, so that its appearance on a label by no means establishes that the product is manufactured by the Liebig's Extract of Meat Co., or that the Liebig process has been used.

By Liebig's original method finely chopped meat was treated with eight times its weight of cold water, the insoluble matter strained off, the liquid sufficiently heated to coagulate the dissolved albumin, filtered, and evaporated to a syrupy consistency. By this method proteins, gelatins and gelatinoids were excluded from the extract. Later, however, Liebig modified the process by using water at 180° F., which may admit into the extract considerable quantities of gelatinoids and soluble non-coagulable protein. Liebig stated that thirty-four pounds of meat are necessary to produce one pound of extract. It is obvious, therefore, that the extract can contain only a small part of the real nutriment of the meat. It contains practically no albumin or fat and very little gelatin, but consists chiefly of the salts and extractives of the meat, and, according to Liebig's statement, should contain from 16 to 21 percent of water, from 18 to 22 percent of mineral matter, and from 56 to 60 percent of extractives.

A few extracts now on the market show by their composition that the original Liebig process has been quite closely followed in their manufacture, but the larger number resemble Liebig's Extract in little but name. Gelatin, blood albumin and meat fibrin are added in certain cases, and in

[1]This is the first half of the paper on "Meat Extracts," and it will be completed in the August issue. The fifth of the series of articles on Foods will be on the subject "Package Foods" and will be published in September.

some the albumin has been partially peptonized. The great majority of extracts contain large quantities of common salt, due to the fact that they are not true extracts, but are made, in part at least, from evaporated pickling brines.

### PHYSIOLOGICAL EFFECT OF MEAT EXTRACTS

The nutritive value of meat, as distinguished from its stimulating and appetizing effects, lies chiefly in the proteins it contains, which are not and cannot be "extracted" and presented in a concentrated form in an extract. To add proteins to the extract, as is done by certain manufacturers, only reduces the amount of the extractives to which meat extract owes its real and peculiar value, and substitutes relatively small quantities of nutriment at an unreasonable price.

Proteoses and peptones, because of their ready assimilation, doubtless possess nutrient value, but the amounts of these compounds present in meat extracts have been greatly exaggerated. In fact, no true peptones were found in any of the paste preparations examined by the writer, this judgment being based on the failure to secure the biuret reaction in the filtrates from the zinc sulphate precipitation of the proteoses. That part of the nitrogen attributed to peptones in the writer's tables is probably due to amid-like anhydrids of the amino acids, Fischer's "polypeptids." Furthermore, much of the nitrogenous matter precipitated by zinc sulphate and generally credited to forms of proteoses, is doubtless due to gelatin and gelatinoids, which have only a subordinate food value.

The true value of a meat extract depends almost entirely upon the salts and extractives it contains, and upon its flavor. The characteristic salts of true meat extract are phosphates of potassium, although potassium chloride is also present in considerable amount. But it is the extractives that give meat extracts their chief value. These may be classed as nitrogenous and non-nitrogenous. Most of the former are basic in character, some are amids, and all are classed under the somewhat loose term "meat bases." The most important of these physiologically are creatin, its anhydrid creatinin and the xanthin or purin bases. In recent years investigators have isolated a number of other bases, but they are present in extremely small amounts. The meat bases are products of the breaking down of proteins in the vital processes of the body, are excreted for the most part unchanged, and have little or no use as builders of tissue; neither have they any value as producers of heat or energy. They are, therefore, in no sense foods.

Probably much larger amounts of meat extracts are used today by hotels and restaurants for flavoring soups and other dishes than are used by invalids. Many physiologists attribute to the meat extractives certain stimulating qualities, but the experiments supporting this view are by no means conclusive. There seems to be, however, quite certain evidence that they furnish relief to fatigued muscle and that they are powerful excitants of gastric secretion. As Hutchinson well says: "They are thus eminently calculated to rouse appetite and aid digestion of any food with which they may be taken. This indeed is their true function, both in health and disease. They are flavoring agents, and their proper place is in the kitchen, not by the bedside."

The non-nitrogenous extractive matters, in addition to the salts already referred to, consist chiefly of lactic acid, lactates and glycogen. Little is known as to the actual amounts of these ingredients present. Glycerol, glucose and milk sugar are occasionally found in the extracts and must be considered as adulterants; preservatives have also sometimes been employed, especially in fluid extracts, but are seldom found at the present time, except potassium nitrate (saltpeter), frequently a constituent of the pickling brines used in the manufacture of certain brands of extracts.

### HOW TO VALUE AN EXTRACT

The comparative value of a meat extract is shown by determinations of water, total ash and its chief constituents, total nitrogen, and the meat bases. These data show the concentration of the extract, the amount and nature of the ash, and the proportion of true meat extractives present. There are preparations on the market, sold as meat extracts, which are prepared wholly from yeast; on the other hand, certain brands of yeast or vegetable extracts are honestly sold under their true names. These resemble meat extracts in taste and appearance, but show marked chemical differences. The important extractives, creatinin and creatin, are absent, while the purin bases are comparatively abundant. The amount of creatinin and creatin found, therefore, is a valuable index as to the source of an extract.

### STANDARDS OF COMPOSITION

Certain standards of composition exist, which have been adopted by the Federal government and by many of the states. These are given below so that the reader may judge as to the standard or non-standard quality of the extracts listed in the tables.

"Meat extract is the product obtained by extracting fresh meat with boiling water and concentrating the liquid portion by evaporation after the removal of fat, and contains not less than 75 percent of total solids, of which not over 27 percent is ash, and not over 12 percent is

sodium chlorid (calculated from the total chlorin present), not over 0.6 percent is fat, and not less than 8 percent is nitrogen. The nitrogenous compounds contain not less than 40 percent of meat bases, and not less than 10 percent of creatin and creatinin."

"Fluid meat extract is identical with meat extract, except that it is concentrated to a lower degree and contains not more than 75 and not less than 50 percent of total solids."

In the judgment of the writer the best standard for a true meat extract is found in Liebig's extract itself. This extract has always been one of the best preparations on the market, and repeated analyses show that it is carefully prepared and with only trifling variations in composition from year to year. Moreover, it contains no foreign constituents, like common salt, glycerol, milk sugar, spices, etc.

### EXPLANATION OF TABLES

An extended review of the literature of meat extracts shows that most diverse analytical methods have been used by chemists and that in many cases a satisfactory comparison of analyses is impossible. In the tables which follow only analyses made by essentially the same methods have been included. These comprise 42 made by the writer, 7 by Bigelow and Cook of the U. S. Department of Agriculture, 11 by McGill of the Canadian Inland Revenue Department, and one made in the laboratory of the American Medical Association. These 61 analyses include 14 solid (paste) extracts, 17 fluid extracts, 8 meat juices or essences, 9 cubes or capsules, 2 meat powders, and 11 miscellaneous proprietary meat preparations.

The tables are necessarily somewhat complicated, as the analysis of a meat extract is by no means a simple matter, and all the data given are necessary for a correct interpretation of the genuineness of the product. The significance of the several determinations in brief is as follows:

*Water.* This indicates the concentration of the extract. The maximum percentage allowed by the standard in a paste extract is 25, and in a fluid extract 50 percent. According to Liebig not over 21 percent should be found in an honest, properly made extract.

*Organic matter.* This includes the nitrogenous constituents, meat acids and any organic adulterants, such as glycerol, milk sugar, glucose, spices, etc., which may be present. Naturally, it varies with the amount of water and mineral matter. Liebig set 56 percent as the maximum permissible amount in a paste extract.

*Ash.* This includes the true ash of the meat, as well as the added sodium chlorid, which is so commonly found. According to the standard for paste extracts the total ash should not exceed 27 percent; according to Liebig, 22 percent.

*Sodium chlorid.* The standard permits 12 percent in a paste extract, an unnecessarily high figure, and one directly encouraging fraud and the use of inferior stock. The natural chlorids, calculated as sodium chlorid, probably do not exceed 5 percent in any of the extracts examined.

*Phosphoric acid and potash.* Phosphates of potash are the characteristic salts of meat. About 20 percent of the ash should be in the form of phosphoric acid and about 30 percent as potash.

*Acidity.* The acidity of flesh is due to the acid phosphates, organic acids and proteins present. As most of the meat proteins are insoluble in water, the acidity of the extracts is due chiefly to the acid phosphates and organic acids. Potassium dihydrogen and potassium monohydrogen phosphates are the chief phosphates present, and lactic acid the chief organic acid. Litmus was used arbitrarily as the indicator in determining acidity, and the values recorded are relative rather than absolute. A low acidity indicates a correspondingly small amount of meat constituents in the preparation.

*Total nitrogen.* In a paste extract this should not be less than 8 percent. This determination by itself, however, gives little useful information, as it is the form in which the nitrogen exists that determines the value of the extract.

*Insoluble and coagulable nitrogen.* The manufacturing process practically excludes coagulable nitrogen from a genuine extract. Likewise, as all of the nitrogen in the extract is supposed to have been soluble before concentration, more than traces of insoluble nitrogen would indicate the addition of extraneous matter such as meat fiber.

*Proteoses and peptones.* The amount of these two forms of nitrogen indicates in a measure the nutritive value of the extract. By the analytical methods used the percentages recorded as proteoses include both proteoses and gelatinoids, as well as gelatin if present. The original process of Liebig naturally excluded gelatin, but since the employment of hot, even boiling, water, it is extremely probable that considerable amounts of gelatin are present in most of the brands. These proteose values, therefore, must not be given too much weight. Likewise with the peptones; as already stated, the writer failed to find true peptones in any of the brands of paste extracts he examined. The values accredited to peptones in the tables represent the nitrogen precipitated by tannin-salt, less the proteoses. This the writer believes to be not natural peptones but compounds of the nature of polypeptids.

*Meat bases.* This percentage indicates in a large degree the amount of true meat extractives present. According to the standard at least 40

## Table I. Analyses of Solid (Paste) Meat Extracts

| Brand. | Manufacturer. | Water. | Organic Matter. | Ash. | Chlorin as Sodium Chlorid. | Phosphoric Acid. | Potash. | Acidity = cc $N_{10}$ NaOH per gram. | Nitrogen as: Total. | Insoluble and Coagulable. | Proteoses. | Peptones. | Total Meat Bases. | Creatinin and Creatin. | Xanthin or Purin Bases. | Other Meat Bases. | Ammonia. | Fat. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| [1]A. D. S. | American Druggists' Syndicate | 18.27 | 52.45 | 29.28 | 15.72 | 3.11 | 6.41 | 4.20 | *7.26 | 0.08 | 2.20 | 1.92 | 2.51 | 0.70 | 0.59 | 1.22 | 0.55 | 0.07 |
| [1]Armour's | Armour & Co. | 19.96 | 58.27 | 21.77 | 6.62 | 5.27 | 8.30 | 5.40 | 8.07 | 0.29 | 2.10 | 2.17 | 3.21 | 0.85 | 0.62 | 1.74 | 0.30 | 0.08 |
| [3]Ramonie (ave. of 4) | Australian Meat Co | 17.48 | 59.54 | 22.98 | 4.79 | .... | .... | .... | 9.01 | 0.33 | 3.83 | | 4.85 | 3.01 | .... | .... | .... | 0.75 |
| [1]Rex | Cudahy Packing Co. | 16.08 | 55.96 | 27.96 | 11.50 | 3.47 | 8.02 | 4.80 | 8.19 | 0.13 | 1.80 | 2.17 | 3.66 | 1.26 | 0.53 | 1.87 | 0.43 | 0.08 |
| [3]Davies | Wm. Davies Co. | 20.80 | 64.08 | 15.12 | 8.32 | .... | .... | .... | 9.18 | 0.20 | 4.08 | | 4.90 | 2.10 | .... | .... | .... | 0.25 |
| [2]Coin Special | G. H. Hammond Co. | 12.39 | 55.93 | 31.68 | 13.25 | 3.19 | .... | 7.16 | 6.86 | 0.06 | 0.86 | 1.48 | 4.21 | 1.24 | 0.52 | 2.45 | 0.25 | 0.43 |
| [1]Michigan | F. F. Ingram & Co. | 18.21 | 53.18 | 28.61 | 15.89 | 2.43 | 5.24 | 3.80 | †7.36 | 0.24 | 1.96 | 2.65 | 1.31 | 0.53 | 0.48 | 0.30 | 0.47 | 0.12 |
| [1]Liebig's | Liebig's Extract of Meat Co. | 20.49 | 61.94 | 17.57 | 3.17 | 5.01 | 7.59 | 8.40 | 9.41 | 0.09 | 2.36 | 2.15 | 4.44 | 2.16 | 0.76 | 1.52 | 0.37 | 0.17 |
| [3]Portrait | Liebig's Extract of Meat Co. | 19.55 | 52.15 | 28.30 | 12.20 | .... | .... | .... | 8.96 | 0.25 | 3.60 | | 5.11 | 3.02 | .... | .... | .... | 0.95 |
| [1]Malto-Meat | Malto-Meat Extract Co. | 14.79 | 48.93 | 36.28 | 25.81 | 5.21 | 5.35 | 5.20 | 5.20 | 0.09 | 0.44 | 2.10 | 2.18 | 0.10 | 0.83 | 1.25 | 0.39 | 0.09 |
| [1]Durham | Melbourne Trading Co. | 36.54 | 36.18 | 27.28 | 22.28 | 1.43 | 2.29 | 1.90 | *5.45 | 0.26 | 3.42 | 0.70 | 0.86 | 0.39 | 0.16 | 0.31 | 0.21 | 0.21 |
| [1]Mosquera Beef Jelly | Mosquera-Julia Food Co. | 24.88 | 50.77 | 24.35 | 13.61 | 3.59 | 5.31 | 3.20 | 7.72 | 0.24 | 2.30 | 2.49 | 2.29 | 0.62 | 0.38 | 1.29 | 0.40 | 0.04 |
| [1]Southwick | Southwick Mfg. Co. | 30.37 | 41.38 | 28.25 | 22.47 | 1.15 | 3.20 | 4.80 | *5.54 | 0.34 | 3.16 | 0.78 | 1.04 | 0.21 | 0.38 | 0.45 | 0.22 | 0.44 |
| [1]Swift's | Swift & Co. | 22.81 | 51.75 | 25.44 | 12.71 | 3.95 | 7.23 | 7.40 | 7.14 | 0.10 | 1.72 | 1.44 | 3.14 | 1.33 | 0.64 | 1.17 | 0.74 | 0.08 |

[1]Street, Rept. Conn. Expt. Station, 1908, 618.
[2]Bigelow & Cook, U. S. Dept. Agr., Bur. of Chem., Bull. 114.
[3]McGill, Canada Int. Rev. Dept., Bull. 267.
*Trace of nitrates present.
†0.73% of nitrate nitrogen present.

## Table II. Analyses of Fluid Meat Extracts

| Brand. | Manufacturer. | Water. | Organic Matter. | Ash. | Chlorin as Sodium Chlorid. | Phosphoric Acid. | Potash. | Acidity = cc $N_{10}$ NaOH per gram. | Nitrogen as: Total. | Insoluble and Coagulable. | Proteoses. | Peptones. | Total Meat Bases. | Creatinin and Creatin. | Xanthin or Purin Bases. | Other Meat Bases. | Ammonia. | Fat. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| [3]Beefene (ave. of 2) | American Fluid Beef Co. | 45.57 | 40.07 | 14.36 | 8.25 | .... | .... | .... | 5.59 | 1.56 | 2.71 | | 1.32 | 0.61 | .... | .... | .... | 1.17 |
| [1]Asparox | Armour & Co. | 68.37 | 17.12 | 14.51 | 10.07 | 0.96 | 2.27 | 1.64 | 1.78 | 0.11 | 0.38 | 0.26 | 0.92 | 0.29 | 0.14 | 0.49 | 0.11 | 0.02 |
| [1]Armour's Concentrated | Armour & Co. | 42.03 | 36.41 | 21.56 | 10.43 | 2.72 | 5.46 | 4.24 | 4.01 | 0.10 | 0.45 | 1.05 | 1.99 | 0.91 | 0.36 | 0.72 | 0.42 | 0.00 |
| [1]Vigoral | Armour & Co. | 43.15 | 41.14 | 15.71 | 5.84 | 2.85 | 5.34 | 3.84 | 4.09 | 0.33 | 0.55 | 0.98 | 1.97 | 0.61 | 0.31 | 1.05 | 0.26 | 0.19 |
| [1]Bovril | Bovril Limited | 43.12 | 41.07 | 15.81 | 7.89 | 2.48 | 3.55 | 3.10 | 5.36 | 1.03 | 1.33 | 1.00 | 1.55 | 0.79 | 0.35 | 0.41 | 0.45 | 0.62 |
| [2]Johnston's | Bovril Limited | 47.22 | 42.98 | 9.80 | 4.37 | 0.59 | .... | 5.40 | 6.57 | 0.21 | 1.72 | 2.15 | 1.24 | 0.20 | 0.18 | 0.86 | 0.25 | 0.48 |
| [3]Vimbos (ave. of 8) | Bovril Limited | 32.87 | 49.81 | 17.32 | 7.98 | .... | .... | .... | 7.36 | 1.29 | 4.48 | | 1.59 | 0.89 | .... | .... | .... | 0.60 |
| [1]Cibils | Cibils Co. | 64.21 | 19.95 | 15.84 | 12.56 | 1.38 | 1.98 | 2.00 | 2.79 | 0.14 | 0.60 | 0.80 | 1.07 | 0.46 | 0.17 | 0.44 | 0.18 | 0.00 |
| [3]Red Cross | Colonial Fluid Beef Co. | 37.70 | 44.11 | 18.19 | 7.62 | .... | .... | .... | 7.28 | 2.13 | 3.89 | | 1.26 | 0.14 | .... | .... | .... | 1.15 |
| [1]Rex | Cudahy Packing Co. | 51.53 | 33.29 | 15.18 | 4.93 | 2.87 | 4.81 | 3.82 | 4.48 | 0.16 | 0.66 | 1.17 | 2.30 | 0.89 | 0.34 | 1.07 | 0.19 | 0.05 |
| [3]Oxo (ave. of 7) | Liebig Oxo Co. | 34.40 | 45.98 | 19.62 | 9.50 | .... | .... | .... | 6.00 | 0.87 | 2.71 | | 2.42 | 0.94 | .... | .... | .... | 1.17 |
| [3]Nutri-Ox | Northland Mfg. Co. | 45.35 | 38.35 | 16.30 | 9.69 | .... | .... | .... | 4.34 | 0.55 | 1.30 | | 2.49 | 0.72 | .... | .... | .... | 2.35 |
| [1]Morris' Superior | Nelson Morris & Co. | 51.80 | 32.39 | 15.81 | 9.83 | 1.78 | 3.36 | 2.20 | 4.04 | 0.22 | 0.81 | 1.11 | 1.48 | 0.00 | 0.15 | 1.33 | 0.42 | 0.13 |
| [1]Mosquera Fluid Beef Jelly | Mosquera-Julia Food Co. | 64.99 | 23.73 | 11.28 | 8.22 | 0.99 | 1.73 | 1.80 | 2.90 | 0.06 | 0.31 | 1.10 | 1.30 | 0.26 | 0.12 | 0.92 | 0.13 | 0.10 |
| [1]Murray's | ..... | 54.07 | 29.84 | 16.09 | 12.67 | 1.07 | 1.97 | 1.52 | 4.22 | 0.02 | 1.59 | 1.61 | 0.80 | 0.30 | 0.13 | 0.37 | 0.20 | 0.08 |
| [1]Sinuox | Sinuox Co. | 57.33 | 26.76 | 15.91 | 11.72 | 1.36 | 2.37 | 3.28 | 2.28 | 0.00 | 0.57 | 0.26 | 0.87 | 0.33 | 0.18 | 0.36 | 0.58 | 0.00 |
| [1]Sinuox for Invalids | Sinuox Co. | 51.57 | 29.51 | 18.92 | 12.46 | 2.18 | 3.48 | 3.56 | 2.70 | 0.05 | 0.31 | 0.64 | 1.42 | 0.64 | 0.26 | 0.52 | 0.28 | 0.16 |

[1]Street, Rept. Conn. Expt. Station, 1908, 642.
[2]Bigelow & Cook, U. S. Dept. Agr., Bur. of Chem., Bull. 114.
[3]McGill, Canada Int. Rev. Dept., Bull. 267.

percent of the nitrogen should be in this form. The standard also requires that the creatinin and creatin shall make up at least 10 percent of the total nitrogen. These two bases are characteristic of meat extracts, and their absence indicates the use of yeast or vegetable extract.

*Ammonia.* This value should be low in an extract of good quality.

*Fat.* This also should be low, the standard not permitting over 0.6 percent in a paste extract. Fat is a detrimental ingredient in an extract, and in any considerable amount indicates an imperfect method of manufacture, and seriously affects its keeping qualities. It will be noted that the writer's fat percentages are generally considerably lower than those of the other authorities quoted. This is possibly due to the use of different solvents, the writer using petroleum ether, which he believes preferable to sulphuric ether in a material of the nature of meat extract.

### WHAT THE TABLES SHOW—PASTE EXTRACTS

Table I gives analyses of 14 brands of paste extracts. The following maxima and minima percentages of certain important ingredients show the wide range in composition:

| | Maxima. | Minima. |
|---|---|---|
| Water | 36.54 | 12.39 |
| Ash | 36.28 | 15.12 |
| Sodium chloride | 25.81 | 3.17 |
| Total nitrogen | 9.41 | 5.20 |
| Meat base nitrogen | 5.11 | 0.86 |
| Creatinin and creatin nitrogen | 3.02 | 0.10 |

A study of the table shows that the Armour, Ramonie, Rex, Davies, Liebig and Portrait brands (although the last named is a little high in ash) satisfy the U. S. standard. Certain samples carry entirely too much ash, while others are decidedly deficient in total nitrogen, and in meat bases. Three brands contain nitrate nitrogen (indicating the use of saltpeter-containing brine), in one case as much as 0.73 percent. The Michigan, Durham, and Southwick brands are markedly deficient in meat bases, and especially in creatinin and creatin. Malto-Meat is a vegetable extract, in spite of its misleading name, and contains only 0.10 percent of these bases. The sample of Swift's extract contains entirely too much ammonia nitrogen for a high-grade extract. When the percentages of sodium chlorid found in high-grade standard extracts, such as Armour's, Liebig's and Ramonie, viz., from 2.88 to 5.47 percent, are compared with the 26, 22 and 22 percent of the Malto-Meat, Durham and Southwick extracts, the distinction between a high-grade and a low-grade extract is very apparent. Furthermore, these last named brands, except Malto-Meat, which is not a meat extract, contain saltpeter, again indicating their inferior source, and explaining the presence of such inordinate amounts of common salt.

### FLUID EXTRACTS

Table II gives analyses of 17 brands of the fluid preparations. Any of these which contain more than 50 percent of water naturally fail to satisfy the U. S. standard; this is true in just half of the analyses given in the table, 69 percent being the maximum shown. Asparox, Cibils and Mosquera Fluid Beef Jelly all contain excessive moisture. In most of the extracts the amount of ash is large in relation to the concentration. Vigoral, Bovril and Rex contain but little added salt, while Asparox, Cibils, Murray's and the two Sinuox extracts contain a great deal. The total nitrogen ranges from 1.78 to 7.36 percent. It will be noted that the percentages of insoluble and coagulable nitrogen as a rule are much higher in the fluid than in the paste extracts; Beefene, Bovril, Johnston's, Vimbos, Red Cross and Oxo are notable in this respect. This is due mainly to added meat fiber and gives the product a distinct food value, although a large quantity of any of these extracts would be needed to supply the same amount of nutriment as a pound of good, lean meat. True peptones were found in certain of the fluid extracts, likewise in certain brands the proteoses were high. The high insoluble nitrogen coupled with the relatively large amounts of proteoses and peptones found in Beefene, Bovril, Johnston's, Vimbos, Red Cross, Oxo and Murray's extracts justify these brands in claiming a distinct, though very moderate, food value.

In the fluid extracts the meat base nitrogen should of course make up at least 40 percent of the total nitrogen just as in paste extracts. The table shows, however, that the brands which contain the largest amounts of insoluble proteose and peptone nitrogen, are, on the other hand, excepting Oxo, decidedly deficient in meat base nitrogen, of course a natural consequence. In fact, Johnston's, Red Cross and Morris extracts are very deficient in creatinin and creatin, the latter containing none at all. Certain brands of fluid extract formerly contained salicylic acid, but the writer believes the practice has been discontinued in recent years.

The claims made for these products, such as great "concentration" and as "containing all that is nourishing in prime, fresh beef," must be taken with more than the proverbial grain of salt which they contain.

(TO BE CONTINUED.)

Dressings of wounds infected by virulent anærobic organisms have been made the subject of an exhaustive study by Fleet Surgeon P. W. Bassett-Smith, of the British Navy, in conjunction with Sir Watson Cheyne at the Royal Naval College at Greenwich, England. Salicylic acid was finally fixed on as the most effective germicide and disinfectant for conditions now prevailing on the battlefields of Europe.

# "OFFICER OF THE DAY" SYSTEM OF HOSPITAL MANAGEMENT

## Responsibility Given to Under Officers Relieves Busy Superintendents, and Brings Greater Interest and Attention on the Part of Participants—Effective Trial Has Proved Value of System

By JOHN R. HICKS, M. D., Chief Medical Officer, Port of New York

IN my excursions through hospital literature I have often found such sentences as these: "The ward is a small hospital which would require only certain administrative additions to make it complete," "A large hospital might be formed by the addition of similar units," "It is permissible to group five ward units under certain conditions on the top of one another."

These sentences have not given us to understand that there is any necessity for correlation and interdependence among the various administrative departments of the hospital, nor do they lay any particular stress upon the various duties of a superintendent, which, among others, involve intimate administrative cooperation in all the departments, whether these departments be medical, surgical, nursing, supplies, pathological, admissions, out-patient or general administrative. To my mind it is most essential to have a uniform standard of administration and above all to discard the "hospital unit," if it means separation and lack of dependence of one department upon another.

One must realize the importance of an administrative unit in its broadest sense and not in the sense of the commonly accepted definition of a "hospital unit," when one becomes familiar with the work of a quarantine character; for it is a hazardous employment. In the experience of this particular service, death in the performance of duty has occurred in the medical branches of the organization, and death or disability of a responsible officer in an emergency might be of grave public consequence were there not another official of rank familiar with the duties of administration to take his place immediately.

The following system of administration was put into effect by order of the health officer for the hospital service of the port of New York over a year ago, so that the assistant medical officer might be able to take the chief medical officer's duties and responsibilities on the shortest notice: "The supervision of the buildings, including hospitals, detention quarters, and all administration functions devolve upon the chief medical officer and in his absence the assistant medical officer must be able to take his place." When one stops to consider that there may be as many as one thousand admissions in a day and that often they may be kept for a period of fourteen days, quick action and good returns are most essential. While this service is not what might be called a purely civil hospital service, I see no reason why the method of administration in operation here should not apply with equal benefit in civil hospital administration.

For want of a better name I may call the system the "officer of the day system," which is as follows:

There shall be an officer of the day, whose duty it shall be to exercise supervision and administration of all departments of the hospital service, to make all the calls for the sick or for emergencies both night and day; to answer all local official telephone calls for the medical officer; to inspect all the property, including buildings, storerooms, kitchens, grounds and boats; to report to the medical officer as often as necessary the conditions found by such inspection and to visit incoming boats arriving at the Island during his hours of duty; to keep careful records of all patients admitted during his period of duty and a minute of such other matters of importance as may come to his attention. His period of duty shall be twenty-four hours continuously from 8 a. m., on the day of his assignment to such duty. He shall be responsible to the chief medical officer and shall consult with him in emergencies; but this does not relieve the chief medical officer or superintendent of any responsibility for the proper administration and government of the hospital service.

I see no reason why the intern in the civil hospital should not be made "officer of the day" and have the duties of that office. By this method the responsibility either for right or wrong doing is most easily fixed.

After trial of this method for a year and a half, I can say that the assistant medical officers have taken decidedly more interest in this work as well as in their books, and I believe the system might be extended to a number of civilian hospitals, if not all, with the result of creating more general unity in hospital administration. In a very large hospital it might be necessary to have more than one "officer of the day" in which case the interns detailed as such will have a good opportunity to learn hospital administration, a thing which has heretofore been much neglected in their instruction.

The MODERN HOSPITAL

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## Rules of Technic in Hospitals

In this, which might happily be called the age of business accuracy, when forces at work in almost any field of activity attempt to correlate themselves with other forces to add strength and effectiveness to their combined efforts, the hospitals have not been idle; they too have been thinking in terms of coordinated effort.

But we have not, as yet, got very far—not nearly so far as we would have got if the composite hospital, for instance, were part of a great commercial machine, whose output in dollars depended, not alone on itself, but on a combination of activities of which it was only a cog.

Superintendents of hospitals, for instance, have created accounting systems by which their earnings and income from all sources can be totaled in accurate comparison with their expenditures. They have reduced their purchasing business to something very much like other commercial achievements; and even in some isolated cases they have made some progress in whipping their scientific departments into a semblance of coordination with their physical and financial operation.

The physicians and surgeons on hospital staffs have also made some progress; they not only want to perform good and effective service to the sick in the institution, but they are now inquiring about the results of this service back in the home of the patient—hence social service and visiting nursing.

There is one other very necessary step—one that has received too little attention from those best qualified to study the problem and get results; and about this Dr. Babcock tells us some personal experiences in another page of this number, and gives us some most serviceable information. This step concerns coordination of effort between the operating physician and surgeon and the hospital administration.

Dr. Babcock confines himself mostly to the story of a simplified surgical technic as practiced in his own hospital. But precisely these same methods are practicable in all the other departments of the institution—a fact which Dr. Babcock suggests.

Every hospital should have definite rules of technical procedure, one set fitted to each department. The best way to establish these rules so they will hold water, is to have the staff members in each service work out a set of rules of their own, these to be approved by the hospital administrator, as showing that they are workable from the administrative standpoint; and eventually they should receive the stamp of finality of the board of trustees—after which they are inviolable.

Where the hospital allows outside physicians and surgeons the courtesies of the institution for their private patients, these outside doctors should be expected to conform to the regular staff rules, wherever their service calls them.

## Crime and Health

Some thirty years ago, a boy just out of medical school, and serving his internship in a big municipal hospital, was assigned to visit the "workhouse" of the city in the capacity of attending physician.

For three months those horseback rides along the country roads, with the wild roses climbing the old snake fences, as though they would seek the highest point whence to send out their fragrance, the larks and thrushes filling the countryside with melody, gave ample time for contemplation—ample time for dreams. Those months stand out in the mind and heart of that boy, after thirty years, with almost a hallowed memory.

The boy was awakened irreverently one morning when the superintendent of the hospital sent for him and handed him the following note:

Superintendent City Hospital.

Dear Doctor: Please send us another doctor in place of that crazy kid that's been on the job; and I advise you to look out for him; his mind ain't right. About a month ago he told me I was a worse criminal than any jail bird I had here; said I was a brute and threatened to report me.

He wanted me to start flower beds in the jail yard and let prisoners take care of them. He even wanted flower beds outside the walls and wanted prisoners to look after them. He's been talking about an honor-roll—as if these crooks had any honor. He said he was going to write to the mayor and ask him to make me send an honor squad of prisoners out to the insane asylum to help 'tend the farm there. He says a criminal is a crazy man and a crazy man is a sick man and needs a hospital instead of the solitary and the "bits" we give 'em here for disobeyin' the rules.

You better watch out for that kid; in the meantime send us a real doctor.

(Signed) THE WARDEN.

For the past two years Dr. Harris S. Cooley, Director of Welfare of the City of Cleveland, has had more than 400 petty offenders (the same class as the workhouse inmates and the chain gang of thirty years ago) living on the 2,000-acre Cooley farm, fifteen miles from Cleveland. These men and women are all honor inmates; they take teams and farm tools and go two or three miles from the buildings; they take their lunches with them and work well. The overseer is not armed and the men work just like other workmen who labor voluntarily for wages. It is rare that one runs away.

Now comes the Illinois State Penitentiary at Joliet. Henry M. Hyde, in the Chicago *Tribune* of June 2, gives a two-column account of the new honor system there. The following are some of the pertinent paragraphs of the article:

"Bei Gott!" he almost whispered. "The grass is just as green as it used to be!"

The man had been penned inside of a stone wall for twenty-eight straight years. The wall is so high that he had never caught a glimpse of what was going on outside.

Half of each twenty-four hours for twenty-eight years he had been locked up in a stone and iron cage.

He is illiterate as well as profane. He is also a murderer. He is serving a life sentence at Joliet penitentiary. One may as well face the facts before he lets go of his sympathy.

Yesterday the man went outside of the high stone wall for good, unless he is returned for his own fault. He became one of the 137 honor convicts who are working the state honor farm, which covers a great stretch of country three miles from the prison walls.

The honor convicts live and eat and sleep in a lot of farm houses, which used to be scattered all over the great tract of 2,200 acres which are now comprised in the one great honor farm. Under the direction of Warden E. M. Allen these houses have been moved on rollers over the country roads and brought together into two groups, the honor convicts doing most of the work.

There is not a gun, not an armed guard, on the whole place. Capt. J. C. Carver, who had army experience in the Philippines, is the official who represents the warden in direct charge of the honor farm. There is also a night watchman at each group of cottages who sees that everything is all right after the lights go out. That is all.

Last year when work on the honor farm began some sixty convicts were employed and housed there. This season for some months there have been 136 living in the farmhouses. Under the direction of farm superintendent, B. H. Faltz, they have put 2,100 acres into crops. They have repaired and rebuilt many of the barns and outbuildings. Yesterday morning a dozen men with riding cultivators were sent out a mile or two from the cottages to cultivate the 650 acres in corn, which already shows a splendid stand.

At noon they came trooping in from all over the great farm in answer to the farm bell, which rang for dinner. There was no roll call, no formal attempt to see that all the men were there. They sat down about long tables, more than ninety in the dining room at one group of cottages, and about forty in the other.

Among them were thirty-six men sent down to the penitentiary for life for murder. Why don't they run away?

Six men in the two years that the Honor Farm has been running have tried it. Five of them have been caught, brought back and locked up in the stone and iron cages behind the high stone wall for good. There has not been one attempt to escape for more than three months. Warden Allen plans to put up some temporary sleeping quarters on the honor farm and to move 360 more honor convicts over there from the penitentiary. That will make a total population of 500 convicts, practically without guards. First of all, under expert direction these men will set to work to build a drainage system which will cover the whole farm.

There is really nothing to add.

## The Layman's Influence on Hospital Work

As bedside diagnosis and empiricism in treatment give way to scientific precision in the care of the sick, we enter upon an era of administrative medicine. The ear, the eye, and the touch of the clinician are no longer his full armamentarium; there are laid out for his use long lists of apparatus, many methods and an infinity of scientific auxiliaries; if he is to keep up with the killing pace which we know as modern medicine, the clinician must now act as the general of an army, with every sick patient a campaign. He must give his orders to subordinates, the pathologist, the roentgenologist, the physical therapist, the dietitian, the nurse; the intern is his aid-de-camp to carry orders and see that they are obeyed.

Meanwhile the gathering together of all this complex organization, the keeping of it in running order, the creation or concentration of the funds necessary to bring it about—all these are as insistent in their demands for special talents and special training as the requirements in the office of physician.

The technic of administration is being well looked after by men and women who, on their part, are equipping themselves in grueling processes of training, and on the whole their end of the campaign is being fairly well handled.

But necessarily there must be some power above the clinician and above the administrator, a power that will cause these two factors to work in harmony and in such cooperation that the

smallest possible energy will bring the largest possible returns. The governing body of a state is such a factor in the social order; the board of directors of a corporation, in business. As these governing bodies are made up of individuals expert in the business they are set to govern, or the reverse, the results will be good or poor.

Why do not these patent facts follow into the organic law of hospitals? Will anyone contend that up to this time the hospitals have had the benefit of experts in their boards of trustees?

Name over the half dozen hospitals in this country that stand highest in the qualities that make for service in keeping with the spirit of the age; now make the most careful inquiry to ascertain who is responsible for the high estate to which these institutions have come. In every case it may safely be predicted that while one or more medical men or the superintendent may be named as the guiding genius of the institution, over and behind him or them will be found a board of trustees or one or more of its individual members, who give the real inspiration, the real support, the real impetus to the activities of the institution.

In a few isolated cases we will find the helm in the hand of some man who, having amassed a competence for himself and family, by keen business methods, has retired from the scramble for more gold, and has devoted to the institution the same talents that gave him individual success. Such a man does not give orders to the cook or meddle in the details of housekeeping; but his business training will have developed in him the power to bring team work into the business, so that everybody does the best he can for the common purpose.

Such a man will have as firm a hold on the confidence of the community at large as he will have in the institution itself, and will be the most potent factor in bringing in money and material support of all kinds when they are needed.

It is the bounden duty of every institution trustee to look in upon himself occasionally, with a view to an analysis of his status on the board; let not these men take to their souls the flattering unction that their importance in the social, commercial, religious or financial community justifies their holding their office. "Faith without works availeth little," says the Good Book, and "by their works ye shall know them," meaning that one who *is* something is worthless to a cause unless he *does* something.

One has occasion to wonder sometimes why more splendid business men, who find a further pursuit of mere money a distasteful routine, and retire, do not engage in the elevating and useful pastime of lending their talents and their time to the development and broader usefulness of some good institution near their hand! Can one conjure up in the imagination a finer or more satisfying end of a busy and successful career, than to spend it in doing good for someone else?

Silver and gold weigh light as air in the scales of immortality, but good deeds are writ in the book of life, and the doer, taking his leave, may have the happiness to know that the world is better for his having passed through it.

### New Things in the Hospital

It has often been deplored by hospital administrators that they cannot get the hearty cooperation of the training school in the institution of new things and new ways. It has been said that training school heads resent the introduction of new technic and of new apparatus; and it is very true that this is too often the case.

But there is another side to this; too often the things or methods suggested are not very well thought out by those who wish them installed, and very, very often medical men and even superintendents fail to realize what it means to set up a new technic in the hospital.

Training school heads have some very green timber to work with; the average pupil nurse does as she is told to do—if she doesn't forget what she has been told, and has horse sense enough; she works like the printer's apprentice, "follows copy," no matter how ridiculous the result may be. These girls haven't arrived yet at a point where they can do things in their own way and on their own initiative. It is hard enough to teach them the technical processes of the hospital at best.

Now if any staff member can come along and upset that rigid technic, by substituting something new, or if the superintendent, a progressive one perhaps, insists on trying out new things, just to see if they will work, it will not take very long until there will be no settled way of doing things at all, and the training of pupils will be a farce.

Responsible people in the hospital should be very chary of asking a departure from the established order in the training school.

Plans have been drawn by Architect J. B. Benedict, of Denver, for a hospital to be erected in that city at a cost of $300,000. Half of the required fund has been donated by a Boston philanthropist, whose name has not been made public, and the other half has been subscribed by Denver physicians. The object of the institution will be to afford hospital care at a low rate to worthy poor who will not accept public charity and are not able to pay the high rates charged by private hospitals. The newspapers of the city, the ministerial alliance and the charity organizations will be asked to determine just what persons are entitled to be received into the new hospital.

## HOSPITAL MEETINGS FOR JUNE

### American Hospital Association—American Medical Association—Sisters' Hospital Association and Nursing Associations Hold Annual Conventions

The San Francisco and Milwaukee Meetings

San Francisco is to be almost given over to medical, hospital and nursing conventions during the latter part of June, too late for THE MODERN HOSPITAL to do more than merely mention the fact and publish a very few of the papers which will have been read before this issue comes out. It is the intention to distribute copies of this number at each convention just prior to its close. One of the purposes of this distribution is that there may be suggestions, either in its text or advertising pages, that will be of interest to those in attendance before they return home.

While San Francisco is busy with its conventions another event, one of the most important to hospitals everywhere, is occurring in Milwaukee, in the First Annual Convention of the Sisters' Hospital Association of the Northwest.

Next month we shall try to do justice to these several great bodies by giving important information concerning the happenings at the conventions, including discussion, news notes and new officers; and some of the most interesting papers will also be published.

### AMERICAN HOSPITAL ASSOCIATION

Papers Read at the San Francisco Convention, June 22-25

#### Little Things That Are Big Things in Hospital Management[1]

BY ROBERT J. WILSON, M. D.,
Director Bureau of Hospitals, Department of Health, New York City.

If the big things of hospital management are to be measured by the standard of money then there is no justification for the title of this paper. I think, however, that most hospital superintendents will agree with me that the big things in hospital management are those that contribute the greatest amount to the direct good of the patient, and that, through contributory channels, indirectly add to his relief and comfort. In these days of efficiency and economy money standards are apt to be used too much in appraising the actual value of things. I would not for a moment decry the necessity of keeping at the lowest possible cost everything that has to do with a hospital, but I am convinced that a hospital which is costing three dollars per day for the care of a patient may be giving less to him than one that is costing one dollar per day.

Most physicians and most medical superintendents, like all other directors of enterprises, are apt to argue from cause to effect, and in considering a proposition of any kind they premise that if such and such a thing happened in one way, and such and such a thing happens in another way, the result will be a certain effect—that is, if it were a matter of hospital management; if a certain amount of money can be obtained for the pay of employees and a certain amount for the purchase of the necessary medical and surgical supplies and equipment, a patient can be taken into the hospital and given adequate scientific treatment for that amount of money. For the consideration of this paper I propose to reverse the order of things and begin with a single patient and say that he demands for his treatment adequate medical and surgical attention, and that in the course of human events, if all goes well, he will be discharged from the hospital cured, and that some of the big little things that contributed to his cure will not have cost the institution one cent of money; but these things, having been properly weighed by the patient and visitors to the institution, will add to its reputation a weight of good report that could not be purchased for any money.

Now, what are some of the little things occurring in the wards which may add materially to the comfort of the patient and the reputation of the hospital? In the first place courtesy on the part of the employees; this costs nothing; it could be enforced in any hospital; next to it, and of far greater importance, which the hospital authorities could not force the employees to give, is sympathy. Courtesy can be purchased, sympathy cannot; sympathy grips the heart of the other fellow, courtesy does not. One may be courteous and cold and repellant, but sympathy is like the sunshine; it warms and makes happy and attracts, it dispels sadness, it softens the hard heart, it shares sorrows, it lightens burdens; it is the finest quality that any doctor or nurse or attendant who is in contact with the sick can have. The sympathetic nurse feels the pain herself, when she pulls the patient's hair while combing it. It's the gentle touch that makes the morning toilet so satisfying to the dependent sick, and these apparently trivial things might be multiplied indefinitely. We all know what they are; do we all see to it that these little details, which mean so much to the patient and so little in money to us, are carried out? The best hospital employees are not always the brightest and most highly educated. The mediocre nurse or doctor who can instil in the patients a confidence brought about by that indescribable chord of human sympathy is the greatest asset the hospital can have. Of course the highly educated one, who has not had educated out of him or herself, through the modern methods of efficiency and economy, that human sympathy which a great many start with, and few end with, would be the employee *par excellence*.

How can employees show this sympathy of which I speak? A patient is admitted to a hospital, coming into such environment for the first time in his or her life, surrounded by strange officers, strange ways of doing things, strange rules, of most of which they are ignorant until they hear in a peremptory tone, do this, or don't do that, from the people immediately directing their case; and at this time they are in as forlorn a condition as it is possible for anyone to be. The nurse and doctor in a ward where such a patient is confined are perhaps overworked, full of their own affairs for the day, and totally oblivious of the fact that there is a new, lonesome, sick, homesick patient in their ward. A smile from a nurse, a kindly inquiry in a kind tone of voice from the doctor, an expression by one or the other to the effect that a hospital is not a half bad place, expressed with the hope that their stay will be as pleasant as can be under the circumstances; a little interest shown as to the condition of the patient without becoming presumptive, or personal, or patronizing, will do a great deal towards their comfort and good feeling. If this kind of conduct on the part of the attend-

[1]Read at the conference of the American Hospital Association, San Francisco, June 25, 1915.

ants is followed up each day, if the almost brutal indifference that is common to many wards is abolished, you will see a great change in hospital management. There are little things that make great impressions upon patients, and the average hospital employee, doctor or nurse, seems unable to appreciate them. Questions should be kindly answered, a request for so small a thing as a drink of water should be immediately granted. The care to be used by doctor and nurse in protecting people against the horror of seeing the dying, protecting them against hearing callous remarks relative to the passing of the patient, the unseemly habit of pointing out patients in the ward and saying, this one or that one needs such and such a thing; giving directions to, or talking to nurses about their condition favorably or unfavorably without regard to their feelings, all are to be severely criticized.

When a patient enters the hospital he is divested of everything material that he has. How is this accomplished? Are his clothes and valuables torn off of him by rude and ignorant attendants, or is he told in an intelligent way why he is deprived of them? Is he given a receipt for them? If there is valuable property, is the hospital and its employees protected by having two persons as witnesses present when he gives up his valuables? Does the hospital provide a proper place to store his clothing? Is it kept on proper hangers and is his underclothing laundered before he is discharged, or does the attendant bundle up all his effects, hat, shoes, clothing, in a jumbled mass and tie it up in a bundle to be given to him on his discharge in a dented, wrinkled, and generally unfit condition? Does anyone take any interest in his clothes? They should! It costs little and means much both to the patient and the hospital. In our hospitals we are about to adopt the system of sending a nurse with the doctor on each ambulance, who will carry with her an outfit of hospital clothing, and who will remove the patient's clothing and jewelry in the home so that on admission to the hospital the question of clothing and valuables will not have to be considered. How often patients are neglected in the matter of the body hygiene! The rules of all hospitals say that the patient shall be supplied with an individual towel, an individual soap dish, an individual tooth brush; and how frequently these things, together with a wash basin, are placed before patients who are utterly unable to help themselves!

The doctor's rounds in the hospitals should be attended to with a strict punctiliousness, no matter how few the patients. Adherence to a rigid system maintains the proper morale in the service. The house staff should accompany the visiting physician, and no matter how much they may disagree with his opinions, or how little they may esteem his ability, they should be forced to show him the respect due his office. It is not the physician that they are serving, but the hospital and its patient, and there should be no deviation from the strict line of duty, irrespective of the personal and medical qualifications of the visiting physician.

House physicians and interns should work under definite prescribed rules, and before entering the service these should be explained to them by the executive officer and they should be requested to ask any information that they might desire at the time of the first reading of the regulations. It should be impressed upon ambulance doctors and admitting physicians that their duties are of a twofold character: first, as medical officers they receive the patients and assign them to the proper wards; second, as administrative officers they come in contact with the relatives and friends of the patients, and from their attitude these people draw their conclusions as to the character of the institution and the kind of treatment that is being accorded to the patients. This is a very important item for the reputation of the hospital, and for the peace of mind of the relatives and friends.

As far as possible the medical business of the hospital, aside from emergency cases and nursing duties, should end at a regular hour, and before the patients have retired to bed. Doctors should not be allowed on the wards after eight o'clock in the evening, unless sent for by a nurse for special cases.

When nurses are employed they should be informed fully of the regulations of the hospital before going to work. A good scheme is to have them read and sign the regulations, which should then be filed in the executive office. After this the nurses should be sent to the superintendent for a talk on hospital policy; such a talk should include the matter of their attitude toward patients; it should be explained to them that patients never voluntarily enter a hospital, whereas nurses solicit their positions; it should be impressed upon them that they should show to the patients the same kind of treatment that they would like to have accorded to themselves or to relatives or friends if they needed hospital care. They should be told what the attitude of nurses should be toward visitors; that when visitors enter the hospital they should be received courteously; and they should see to it that the patient has every opportunity that his or her condition will allow, to have a proper visit; and while of course the time of this should be limited, the nurse should explain this courteously and firmly when the patient's visitors enter the ward. In all questions of hospital administration and medical treatment nurses should refer the visitor to the proper officer. In matters of no special importance they should answer the patient or visitor, and give the information sought, in a way that would lead him or her to believe that this was their sole interest in life at the particular time. It is the duty of nurses to have visitors leave the hospital with a pleasant remembrance of the visit. They should neither ask of, nor give confidence to visitors; they should not show an undue interest in the private affairs of the patients or visitors, and under no conditions should they deport themselves in any other way than would be considered as good form in polite society. Nurses should be told what their attitude should be toward the employees with whom they work. Cruelty to patients and insubordination to officers should be dealt with by immediate dismissal; there should be no compromise in these matters. They should be told that in the performance of their duties they should be helpful to one another, and new nurses should be given every possible information necessary to make them good employees for the hospital. In their conduct towards their subordinate workers they should be firm and tactful, and at the same time kind, remembering that their differences in station are largely a question of advantages. Many a nurse has spoiled a good ward maid by failing to be firm and tactful, or by forgetting this admonition.

The supervising nurse or superintendent should keep an efficiency record of the nurses, and I think the most important item to be considered would be that of nursing instinct. Nurses are something like preachers; preachers may be turned out by theological schools as very effective theologians, and nurses may be made by training schools into highly educated and trained nurses, but only those that have been called are the ones that can give at the bedside of the very sick the comfort and care which is so satisfying to those to whom they minister. Unnecessary noise in the wards of the hospital may be a serious detriment to the restoration of patients to health. I have

recently received a complaint from a patient who was in a room off a private hall of a large hospital, where he told me that his stay was made hideous by the banging of doors, the rattling of dishes, the constant unnecessary tramping of visitors and employees along the hallway. All such practices should be stopped.

The attitude of all employees toward hospital property should be one of careful conservation. It is the duty of the superintendent to call the attention of nurses, as well as other employees, to their responsibility in handling hospital property. They should obey the rules laid down for its preservation, not because they are rules, but because they should feel that the conservation of the property is an obligation as binding on them as that of giving their full service to the nursing care of the patients.

The office of the hospital should be run along business lines. There should be a place for everything and everything in its place; this includes employees as well as records. Every hospital that deserves the name must be equipped with a proper register containing all the information of statistical and administrative character necessary to the making of vital statistics and the legal protection of the hospital. Except in emergency cases, the first medical thing that happens to a case on admission to a hospital is the taking of the history; its value depends upon the thoroughness and accuracy with which it is taken; its accuracy depends upon the ability of the doctor to draw out of the patient the salient points. What kind of a person do you propose to send to a patient to make on him the first and most lasting impression of your hospital? What kind of instruction is he to have from the medical and administrative staff to prepare him for this very responsible work? Do you ever think what this laying open of his life secrets means to the patient? Is his confidence and feeling to be lightly considered? I say no. Our duty is not fully performed if we fail to protect the hospital and the patient in this respect.

It is not the province of this paper to deal with the purely medical aspect of hospital management. It is assumed that every hospital is equipped with enough medical and surgical supplies and equipment to carry on its work, and that the medical talent devoted to it is equal to the demand made on it. I have known hospitals where histories were not kept beyond the necessary bookkeeping and registry requirements; such a condition is unfair to the hospital and to the patient; the commonwealth that supports the hospital, moreover, is entitled to the statistical data they fail to keep. Adequate medical records must be kept from which at the end of every fiscal year a medical report showing the value of the medical work performed can be issued.

Besides the clerical force of the office there should be stationed at the door some employee to receive visitors. I think that the best kind of an individual for this position is a maid, corresponding to the parlor maid in any well-regulated home. She should receive the visitor, show him to a seat, ask him the object of his visit, carry his card to the proper officer, and after delivering it return to him and tell him that he will be seen as soon as the business of the hospital will allow. I know of no officer in the institution who could give as much satisfaction to the visitor as the individual who meets him at the door. I have within the last few years stood trembling in the outer halls of a hospital awaiting an opportunity to make my wants known, where my request has been taken by an august person, so impressed with his own importance that he has filled me with astonishment. I have sat waiting in the hallway of another hospital awaiting developments for one hour after being shown to a seat. I have seen in the institutions under my own charge visitors met at the doorway with scant courtesy. They have been sent to the waiting room and left there uninformed as to how long they would have to wait, or whether their message had been given to any person in authority; and in every instance I have said that if opportunity ever offered I should certainly hold these examples up as the best illustration of what a hospital can do to show that it acts in direct opposition to the principles for which its name stands.

The telephone in the hospital is a medium for the quick sending of information from one department to another. It should always be remembered that a telephone order of any kind should be confirmed by an order in writing. The word of the man on either end is equally valuable, and if a balance were struck on the failure of management on account of telephone orders there would be a large deficit on the side of efficiency. Notices of death, serious conditions of patients, complicating conditions are best conveyed by telegrams. Inability on the part of the company to deliver the telegram will result in immediate notice of the sender to that effect. The trivial cost of the telegram is very small indeed as compared to the importance of the message conveyed, and you have an absolute witness to your effort to send reliable information properly and quickly. Special messengers, telephones and Uncle Sam's post are all good, but none of them to my mind are to be compared to the reliable telegraph company. Confirmation in writing of telephone communications leaves no question of doubt, and prevents an unnecessary distribution of responsibility for failure to comprehend or carry out instructions.

When patients are admitted to the hospital with complicating conditions on admission, which might give rise later to a question of whether or not the complication was a result of hospital management, it is well to give notice at once that the patient was admitted to the hospital suffering with the complication. This allows the friends and relatives to make immediate investigation, and releases the hospital from the necessity of an explanation when the patient is discharged.

The bookkeeping department of the hospital should be efficiently established. There is no hospital small enough to omit the keeping of books, the making of an inventory and the issuance of an annual report. The same thing is true in regard to the storehouse. Every hospital should receive its supplies in the form of stores and issue them from stores on requisitions written by the director of the activity needing them, countersigned by the superintendent. Requisitions on stores should be made on specially provided blanks from which, after stores have been issued, the books of the hospital can be posted. Additions to the inventory should be made regularly from the books of the hospital and deductions from the inventory should be made from lists of condemned articles presented to the employee in charge of the stores in exchange for the new ones desired. Close adherence to these rules insures two things: first, that all of a supply will be used; second, that an article of equipment will be worn out before being replaced, and that there will not be unnecessary duplication of an article in any activity. If the hospital is only large enough to have a very small number of employees, such a system should begin at the first. There is no stone in the foundation of the institution which is more important than this one. Bad finances usually indicate bad treatment. Supplies should be repeatedly inspected whether purchased on a specification or by the cook going out with the market basket. The quality of supplies should always be good. Where an attempt at economy

is practiced, by the purchase of low-grade food-stuffs, the amount of table waste and the loss in energy of employees will represent more money than would have been spent in the purchase of good foods in the first place.

Careless criticism of good food by a dyspeptic superintendent in the presence of patients and employees makes it bad food to them. All officers and employees should be cautioned against loud talking and against discussing the policies of the institution in the presence of any persons other than those to whom such policies are of personal and professional interest.

All hospitals see to it that medical attention is strictly given, but how few take any interest in the feeding of the patient. It is the bane of every hospital I have ever visited, where the wards are of a considerable size, that there is a singular disregard of the needs of the patient in the dining room. The dietary table of the dining room service should be so arranged as to contain the greatest variety of foods possible to the resources of the hospital.

The establishment of a basic dietary table will be found to be not only a convenience, but a saving proposition as well. A table of menus should be made and adhered to; and in making menus the heads of divisions should be consulted. It is better to give them what they want and restrict the variety, than to serve an abundance of things that they will not eat. You do not confer a favor on the various members of your menu committee when you appoint them, but you do make them perform their proper duties. Meals should be served in such a way that the recipients will not be able to tell by experience just what each day has in store for them in the way of food. Menus should be arranged numerically from one to ten, or fourteen or twenty-eight and repeat irregularly, not by week or month. In the arrangement of tables, neat linen, a center-piece of flowers, an assignment of chairs that enables congenial groups to be together, will add materially to the general good-will of employees. The enforcement of stringent regulations against diners at table ordering the serving girls or criticizing the service or the food, will do away with many complaints commonly made in the hospital about the diet and service. Constructive, helpful criticism about any part of the service should be invited and thankfully received in the office. This should be understood by employees and they should be encouraged to submit such in writing.

Choosing a cook is probably one of the biggest little things about a hospital. We all know the qualities that go to make up a good cook, but do we all know that half of the responsibility and half of the success of the cook rests on us? The average cook saves or wastes in direct proportion to the saving or wasteful disposition of the superintendent of the housekeeping end. The cook does not make the menus, but the menus often make the cook.

In a large hospital a dietitian is a useful and sometimes necessary adjunct. Her usefulness, like that of the cook, depends upon the common sense of her immediate superior. It is a joke to believe that you can feed people on calories; it is a calamity to reject the value of calories in balancing a ration. It is just as easy to give people food that they like and that contains the appropriate number of calories as it is to give them a highly nutritious but unappetizing food they don't like and won't eat.

For the last few years I have had a good many fool food ideas advanced to me. I have had a good many calorifically good but personally distasteful meals proposed to me, and I am more convinced than ever that it is food and not calories that is needed in the kitchens and dining rooms of our hospitals. Mark you, I said kitchens and dining rooms. In the office it should be calories. I should say that next to a knowledge of weights and measures a knowledge of calories is most valuable to a dietitian and a medical superintendent. Without a thorough knowledge of physiology I should say that a knowledge of calories was about as valuable to anybody as a sextant in a fog.

Recently the Department of Health, through its Bureau of Public Health Education, established an educational lunch room where the menus are printed in such a way as to show the food, its price, quantity, number of calories and protein in grams. The tendency of the present time seems to be toward a closer knowledge of food values, and, considering the hard work performed by nurses, the adoption of such a plan in the doctors' and nurses' dining room might add to their knowledge of how to take care of themselves as well as to supply them with information, that they may answer intelligently questions asked by patients about food values.

One of the big things in hospital work is the question of light, heat and power. We spend a lot of time and money in selecting the right kind of boilers, but we neglect to instruct our subordinates in how to fire them. We waste more money still in fuel saving devices, and we let a lot of heat units go up the chimney and a lot more go out with the cinders. In our wards we call for more steam, and when it gets too hot we open up transoms and windows instead of turning off the steam at the radiators.

We turn on a flood of light for some particular purpose, and when it has served its end we let it go on burning at eight cents per k. w. hour, or a dollar a thousand feet of gas, and wonder what other device we can get that will cut down the coal bills or the lighting bills. We allow water to drip from faucets until erosion has so injured them that they have to be reseated. We ought to have a noisy water meter in the office to remind us what we lose through neglecting leaks. Our carpenters and other mechanics should be trained to make minor repairs without specific orders. The grounds of the hospitals should be kept in a neat and clean condition.

I think the mortuary chapel and its attendants should receive our careful consideration. Somebody has said that there are three great events in the life of a man, his birth, his marriage and his death. In hospitals with an active service we are apt to forget the solemnity of death. We forget that in every death we are being shown the immutability of Nature, and, above all, we forget that what is one of the regrettable but inevitable incidents of routine of hospital work is a tragedy in the lives of the people who are left to mourn for those who die. The red tape of office business, the cold and careless, the sometimes almost callous treatment of the afflicted should be suppressed and a due consideration for the bereaved should be given them, even if this solemn event has not raised in us and all of our associates those meditations and reflections that undoubtedly it should.

You will find in one hospital engine room smooth-working machinery with no creaking or grinding of the parts. The engineer is on the job, he is giving the grease cups little turns, he is supplying little drops of oil here and there all the time, and his attention to small details is making all his work go without friction. In another hospital you will find creaking, grinding, rattling machinery due to carelessness and neglect of these things. It is just the same with your management of your hospital. The big engine will move and the hospital will go on with groans and complaints, all of which could be avoided by the attention to little things, the smallest of which is not too small to merit your attention if it but adds a little to the smooth running of the hospital or the comfort of a patient.

## The Care of Cases of Mental Disease in General Hospitals[1]

BY HENRY M. HURD, M. D., Baltimore, Md.

When Benjamin Franklin wrote the petition to the General Assembly of Pennsylvania, which was the first step in the establishment of the Pennsylvania Hospital, in 1751, he based his plea largely upon the need of providing accommodations for the insane in this hospital no less than for the friendless and homeless sick.

For many years thereafter provision was made for the insane by the Pennsylvania Hospital in the building on Pine Street, and, in fact, it was not until 1840 that the department for the insane was established as a separate institution in West Philadelphia.

The same course was pursued in the New York Hospital established in 1792. The insane there were at first housed in the same building, later in a building especially erected adjacent to the hospital, and it was not until 1822 that a separate institution was erected at Bloomingdale for the sole treatment of the insane.

In Boston in 1818 similar provision was planned and was only prevented from being carried into execution by the liberality of John McLean, who gave funds for a separate institution. I mention these little scraps of history to show that the care of the insane in the wards of general hospitals is no new thing.

The question very naturally occurs, "Why was this original plan given up?" The answer is very simple. In these early days the nature of insanity was imperfectly known and appreciated, and "insanity of conduct" was about the only form recognized, and the presence of excitement was largely the diagnostic sign of it. The active, demonstrative and irrepressible victim of excitement was alone considered to be insane. When he became quiet, even if he remained depressed and obviously unnatural or under the influence of delusions or mentally impaired, he was regarded cured. There was no longer any room for him in a hospital, as his need of care was not urgent, and he was accordingly discharged. Under the circumstances it often became necessary to provide for his care in an almshouse or a private family, or even in a strong room at his own home, if he remained irresponsible and incapable of earning his own living. Hospital care of the insane was at that time on the same footing as hospital care of the helpless and friendless sick. It was designed to meet emergencies only, and could never be regarded as a permanent provision for them. Insane persons who did not recover or who if quiet and self-controlled were not able to resume their places in the world as self-supporting citizens, could not remain in general hospitals indefinitely, because there were too many of them and hospitals were not arranged for their continued care; consequently separate provision was made for them.

It is now evident, however, that the exclusion of all insane persons from general hospitals has been a disadvantage to the hospital and to the insane, and has tended to place too much emphasis upon the legal aspects of insanity, and to obscure the view that insanity is a disease which ought to be treated promptly under the same conditions as other bodily diseases. This does not imply that many cases sooner or later do not require a legal commitment to an institution especially arranged for them. Many, unfortunately, cannot remain in a general hospital indefinitely because of the chronic character of their diseases; and often it is an advantage at one stage of recovery to get a change of scene; but many more persons can be successfully treated in general hospitals—upwards of 50 percent at least, according to the experience of the Albany Hospital—and will not need to go to a special hospital or require the formality of a legal commitment.

It is proper to state here that originally in many states the legal aspects of mental disease were not so prominently in public view and that patients at first were generally admitted to institutions without any legal formalities beyond certificates of insanity from one or two physicians. About forty years ago, however, largely through the pernicious activity of an uncured insane woman, so-called personal liberty bills were enacted in many states, which prevented all restraint of the liberty of an insane person without a prior decision as to insanity and an order of a court. In Illinois, in fact, for many years the victim of mental disease was arrested and taken into court upon the charge of insanity, a jury was impaneled, attorneys were assigned for prosecution and defense, and all the legal formalities of a trial were ended only by a verdict of "guilty of insanity" or "not guilty of insanity." This tended to prevent the early treatment of insanity by hopelessly complicating the diagnosis of a bodily disease with a question of law as to the propriety of custody for the purposes of treatment. As a result the existence of mental disease was felt to be in a degree a crime and treatment was not sought until the manifestations of it were so plain that even a jury could not mistake them.

The need of prompt care for such patients finally compelled the organization of detention hospitals in New York, Chicago, Philadelphia, Washington and other cities. The detention wards attached to Bellevue Hospital in New York may be regarded as the best examples of such places of detention. They furnish custody and give an opportunity to determine the need of commitment, but do not give hospital treatment. If persons are not violent enough to be deprived of liberty they cannot be detained. Hence, detention hospitals have had a limited usefulness as places of treatment and cannot be considered true hospitals.

A better arrangement has obtained at the Albany Hospital in what is known as Pavilion F. This consists of two wards of a large general hospital—one for each sex—arranged for the prompt treatment of mental cases, without the formality of any legal proceedings at the outbreak of mental disease, whenever the condition requires removal from home. These wards have been placed under the care of a skilled psychiatrist of large experience who has had a continuous service for upwards of twelve years. During this period, as is seen by the last report, 3,133 patients have been treated, of which number 1,670, or 53 percent, have been able to return to their homes without being sent to a special institution for mental diseases. The success of this pavilion is largely due to the skill of the attending physician and the confidence which its work has inspired in the community, so that patients have been admitted each year in largely increasing numbers.

There have also grown up in a few instances what have been termed psychopathic hospitals, modeled largely after those of Germany. The first of these was established by the state of Michigan at Ann Arbor in connection with the hospitals belonging to the state university. It was at first designed for the speedy treatment of cases of acute mental disease, but eventually it was very wisely brought into relations with the state hospitals for the insane and has been able to cooperate with them in furnishing the clinical diagnostic tests now required in pathological work and in the study of special forms of disease. The psychopathic hospital, however, constitutes a department of the general hospital and serves for the care and study of acute mental conditions.

[1]Paper read before the annual meeting of the American Hospital Association, San Francisco, June 24, 1915.

In Massachusetts a psychopathic hospital has been established in Boston as a branch of the Boston State Hospital. It furnishes facilities for the study and treatment of incipient and urgent cases of insanity, but it is not connected with a general hospital, although general hospital methods are employed and the nursing and staff organizations are similar.

In Baltimore the Henry Phipps Psychiatric Institute has been established as a department of the Johns Hopkins Hospital, in close proximity to its wards. The medical organization is similar, although separate, because of the special training of its medical officers, and its nursing is done by the pupils and graduates of the training school for nurses connected with the hospital. Its relations to the hospital are much the same as those of Pavilion F of the Albany Hospital.

In such psychopathic hospitals attached to general hospitals the obvious advantages are the greater activity of the medical service and the stimulating effect of an association with a general hospital. Both physicians and nurses are filled with the spirit of the hospital which stands for constant effort for the cure of patients. General hospital nurses and physicians in their turn feel the mighty influence of a department which gives itself without reserve to the sympathetic care of those who are suffering in mind as well as in body and who need the highest devotion of both physicians and nurses.

The disadvantages of such association should not be forgotten. The proximity of noisy or excited persons is often a source of annoyance or injury to persons in the adjacent wards who may be extremely ill or nervous. Many mental cases also soon feel the need of more abundant open-air exercise, such as is practicable only in an institution located in the country. Hence such a hospital ward must be regarded as an emergency provision for acute forms of mental trouble and cannot be expected to meet the wants of every form of disease for an indefinite time. It affords an opportunity to study the disease thoroughly and frequently permits the patient to return to his home restored to health without being subjected to a legal commitment to an institution. It is especially adapted to the special care of the various forms of delirium due to alcoholics or drugs, or to the toxic effects of fatigue or exhaustion, or to the toxemia of Bright's disease or acute febrile conditions.

If a general hospital is engaged in the education of medical men and nurses there are additional reasons why it is desirable that opportunities be afforded to these two classes of students to become familiar on the one hand with the recognition of forms of mental disorder and the best hospital methods of care, and on the other with nursing. These can be better learned by actual contact with such patients in general hospitals than by clinics or occasional visits to special hospitals, or by didactic lectures.

It is further important that the study of the phenomena of mental disease should be made obligatory upon medical students and nurses. Such disorders are encountered daily in the routine of general medical practice or of nursing. How few there are who are able to discriminate between a toxic delirium due to an infection, a fever, a poisoning by iodoform or some apparently harmless remedy used in medicine or surgery, etc., and a well-developed form of mental disease requiring close custody and watchful care! And yet the future of the patient may be permanently affected for weal or woe by the prompt recognition of the condition.

The nursing care of mental diseases can never be adequately accomplished until it is placed in the hands of educated women who are trained for it and are familiar with general nursing, but who need an insight into the higher privileges of the nurse which are acquired only by actual contact with mental cases. As Miss Taylor has recently said:

"The conclusion obviously to be drawn is that the woman is the important thing—one fitted by her natural inheritance and by her education—and the woman who is the most successful in this work is the one who has complete possession of herself; one who understands and appreciates human nature; one who has a keen sense of her relationship to others; who has judgment, patience, observation and tact; who knows the great advantage of silence, but at the same time knows when to speak; the woman who has had the broadest culture acquired by reading or travel, who has added to her general education many accomplishments, thus making her interesting, versatile and resourceful—such a woman we crave for our mentally ill patients. When more of the type above described are in our mental hospitals (and for that matter in our general hospitals as well) we may look for astounding results, even though the doctors are still debating over whether or not in dementia præcox there is a pathological change in the brain cell or whether psycho-analysis is the proper method of treatment to employ in functional neuroses. The nurse, properly equipped herself, who cooperates with the physician and enters into the life of her patient, can do more than anyone else to establish proper habits of thought. It is she who spends hours with the depressed patient, or the one whose mind is filled with the sordid things of life. If she can substitute from her own experience something else to take the place, if she has patience to plod on and courage to believe, as Dr. Osler says, that life is a habit—a succession of actions that become more or less automatic—that one trial after another, one failure after another, gives power, she will not become discouraged, though the process seems slow, but eventually will accomplish wonderful things. And not alone does the ideal nurse need physical and mental power, but she needs moral and spiritual power as well, for there is no kind of work, no association with humanity that brings one more in contact with the grosser side of life than does mental work. Thus it is she needs the uplifting support which comes alone through contact with the moral and spiritual influence."[1]

Nothing could more clearly represent the advantage of the attitude of mind which the educated woman nurse brings to the discharge of her duties when placed in charge of mental disorders. She looks upon nursing from the standpoint of the relief of bodily disease and has little or no sympathy with the old-time attitude which so long characterized those who had charge of mental cases, derived largely from the traditional belief that their condition was due to demoniacal possession and was to be relieved not by kindness and sympathetic care and good nursing, but by seclusion, confinement and constant repression. While therefore the educated woman nurse is needed for the care of mental disorders it must not be forgotten that she equally needs the experience which such care brings to her. The tendency of the nursing of bodily disorders is towards routine and uniformity. This is especially true of surgical nursing. Much of the work of a nurse is an exact science and appeals to the head more than to the heart, and there is always danger that her attitude towards her profession will become cold and impersonal. The nurse sometimes becomes a stickler for hours of duty and daily life according to a formula and does not develop an active sympathy for her patients and a personal interest in their sufferings. The nursing of mental cases changes all this. The patient is no longer a mere case of some interesting form of bodily disease, but a suffering human being who may be led from the darkness of gloom or of mental irresponsibility into the light of reason and clearness of mental vision by the personal

[1]Johns Hopkins Hospital Nurses' Alumnæ Magazine, October, 1914.

work of the sympathetic, enlightened and unselfish nurse. The "vision splendid" once given to her can never be forgotten and will have a lifelong influence.

To descend to a lower level, as a reason for utilizing wards in general hospitals for the treatment of mental cases, the manifest economy to the state may be added. It has been found in the experience of Pavilion F at the Albany Hospital that at least fifty percent of the patients admitted do not need to go to any other institution, but are able to return home restored to health or so far improved that a subsequent convalescence is assured. The future of the patient is secured, and the legal, commercial and social evils which threaten a man who has been committed to an institution for the insane are avoided. Such prompt care and successful treatment of several hundred mental cases each year give relief at a time when the mental disorder generally presses most severely upon the family, and hope is not extinguished, as it so often is when a patient is legally committed to a state hospital.

It is evident that the crux of the situation in such cases is prompt and enlightened treatment. This should be secured without legal formalities precisely as admission is secured to any general hospital. If patients require to be committed legally, they should be sent to state hospitals where legal authority exists for their detention. As long as patients are willing to remain informally and can do so with safety to themselves or their associates, they should be given an opportunity to receive hospital treatment. If they are violent, turbulent, homicidal or suicidal they should go elsewhere. If patients, however, are admitted early without legal formalities the danger of the development of these unpleasant characteristics is much diminished. The use of general hospitals for the prompt and efficient treatment of mental cases is, in the writer's opinion, of the utmost importance in every city large enough to supply sufficient patients to enable the hospital authorities to do systematic and efficient work. It is useless to attempt to use a general hospital for mental cases unless proper medical and nursing care can be assured in wards especially equipped for them.

## SISTERS' HOSPITAL ASSOCIATION OF THE NORTHWEST

### Papers Read at the Milwaukee Convention, June 24-26

### Staff Organization[1]

BY R. E. CASTELAW, M. D., Kansas City, Mo.

Refer me to a hospital that is meeting its full measure of responsibility to the community, that is rendering scientific service to the patient, that is offering an example of thrift, honor and efficiency, and I will show you an institution that is in sympathy with, and that enjoys the full confidence of, its medical staff.

The staff is the predominating factor in every hospital and its character and policy will largely determine success or failure. The influence of one member who has a low standard of responsibility will outweigh the influence of a dozen high-class men with whom he is associated. Individuals are known by the company they keep; hospitals are measured by the sort of men composing, and the plan of organization of their medical staffs.

In this paper I shall mention very briefly something of the importance of selecting men for staff positions who are suited by training and temperament for the work; of the hospital organized for the care of a special class of workers or for the treatment of special diseases; of the general hospital and some of its difficult problems of staff organization, with a closing word on the relation of the staff to other hospital departments.

Upon the character of the hospital and the needs of the community will depend the plan of organization of the medical staff. If a hospital is established to meet the demands of an industrial plant of some kind, or a railroad, or, in fact, any class of special workers, the problem of a staff is an easy one. The chief surgeon or medical superintendent has under his direction the working of the entire hospital scheme, and the plan of staff organization simply meets the requirements of the particular service. The one in charge is responsible to the officials of the company, and much of the work is routine, as the same system obtains in the hospital department as is found in other branches of the concern.

If the institution is a hospital established for the treatment of special diseases, such as tuberculosis, diseases of the skin and cancer, or diseases of the nervous system, a plan must be worked out to meet the individual needs of each. Systematic and scientific study and research have made these hospitals a necessity; but time forbids a discussion of their staff organization in this paper.

Let us now pass from the consideration of the special institution and turn to the general hospital, since I am assuming that a majority of those here today are especially interested in matters pertaining to the staff organization of an institution whose scope of service includes the care of patients in all the various branches of medicine. For the practical purposes of this discussion I think we can agree that the term "staff" will include all that branch of service which has to do with the scientific care of the patient. Here the authority of the staff should end, and the executive department, whether it be composed of a special committee or a superintendent, should have charge of all other hospital matters.

Usually the first thing considered, when a community begins to find itself in need of a hospital, is the staff membership and organization. If it so happens that there is no one in the locality who has had experience in such matters, many and serious mistakes may be made. Everyone agrees that the staff must be composed of high-grade, properly trained men. Reasoning from this point of view popular and prominent physicians with large practices, or those who might influence financial aid, are often given the most important places on the staff. In some instances this may be a feasible plan, but it usually results in placing in important positions those who, for want of time, or for lack of inclination, or on account of insufficient training and experience, are not at all suited for the work assigned them. This immediately places a handicap on the entire working plan of the hospital. Because a physician is popular in his community, or because he may be able to influence gifts from well-to-do families in which he may practice, or because of his social prominence, it does not follow that his addition to the medical staff will add to the strength or dignity of the institution. In this day and age something more is demanded. This is a time of special knowledge. The hospital laboratory of chemistry, pathology and bacteriology, the use of all sorts of new diagnostic apparatus, the ever changing idea of the applications of therapy, call for men able to meet the added responsibilities of modern technical methods.

I am quite certain that in a large majority of cases it would be far better to appoint men to staff positions who have been trained according to the later idea of medical teaching, possibly in a school that demands the fifth, or so-

[1]Paper read before the Hospital Sisters' Conference, Milwaukee, June 25, 1915.

called hospital year before the student graduates. Young men of this type are usually good students and their time is largely occupied in study, hence they must of necessity acquire a practice very slowly. In this class of men hospitals find physicians with time to attend properly to the work, with sufficient inclination to create a lively interest in it, and with enough ambition to work in harmony with the other departments in an effort to develop a reputation for scientific work in the institution.

After the staff has been selected, usually by a board of trustees, it may be divided into three divisions, viz., the consulting staff, the visiting staff, and the resident staff.

The first division is usually composed of the older men who have passed the active stage of their career, but whose judgment and large experience make them invaluable as consultants and advisers. Men of this type are generally willing to give freely of their time to committee work and regard it as an honor to assist and advise with the executive department. The institution has their warmest sympathies, and a great mistake is made if, because they are somewhat behind in scientific matters, they are in any way ignored. The hospital having a high-grade consulting staff is indeed to be congratulated.

Upon the second division of the medical staff will fall the responsibility of making or unmaking the hospital. The men composing this group should be selected from the active, ambitious men; men trained in high-class schools, and, if possible, with hospital experience as residents. Too great care cannot be given the matter of selecting the visiting staff. Everything must be set aside for honesty, ability and faithfulness, for these men will have not only the responsibility of the care of their own private patients, but they must give the free cases equally good care and attention. Aside from the supervision of his private cases and free service the staff physician must meet the responsibility of properly coaching and training his resident. This is a difficult problem. "As the twig is bent, so is the tree inclined," and as the young physician is trained so is his bent in after life. Many young physicians, representing a splendid type of manhood, might date the beginning of their professional failure from their resident days. The chief of a given service should have his division so organized that he can step into a ward and obtain all of the information regarding his cases without delay. Additional notes of all kinds and results of subsequent special examinations should be so entered on the chart that it will be an easy matter for him to grasp his patient's condition at once. Careful history taking and routine examination must be encouraged and in some instances demanded. The taking of complete systematic case records by the resident staff; the signature of visiting staff members over diagnosis or opinion, and the systematic filing by a competent clerk of all case records, with diagnosis, treatment and results, are essential to the success of any hospital. The resident should be permitted to advance just as rapidly as his ability and energy will permit. Experienced residents are usually competent to do minor operations and to assume responsibility for a diagnosis or outlining a course of treatment.

The third division of the staff, namely, the resident staff, is a very important part of the unit and many times is a matter of great concern to the hospital management. The selection of men for the resident service calls for great discretion and judgment. Graduates of the high-grade schools are likely to be satisfactory residents, but this is not always true. Some of the best residents graduate from very mediocre colleges. The school does not make the man. Neither will the man making the highest grade in a competitive examination always render the best service. It takes more than a technical knowledge of anatomy and physiology to make a good resident physician. Education and training will go a long way in the matter, but there must be the inclination on the part of the individual to adjust himself to many trying conditions or his work will probably be unsatisfactory. It seems to be very difficult for young men just out of school to realize that they are no longer boys, but men with some very serious responsibilities just ahead of them. It is not unusual for strikes, and other very undignified procedures to take place in some hospitals and to be reported in our daily press dispatches. The refusal of residents to submit to reasonable supervision and regulation has in some instances made it necessary to consider plans to do away entirely with the resident service. Inquiry among staff physicians of some hospitals indicate that they would prefer to organize their own unit and assume the additional responsibility rather than undertake to train properly a young man who has inherited a natural tendency to have all the so-called fun he can and to do just as little work as will insure his position on the service. Junior assistants could be selected from men who have been out of school for a year or two, yet who have been unfortunate in not securing a resident service at the time of graduation. This plan is a very feasible one and has some splendid points. Prominent men of all the various departments of the staff say they are constantly besieged by young practitioners of no ordinary ability who desire to do hospital work. These voluntary assistants would approach their work with a definite and serious idea of their duties, which would eliminate many sources of contention. It is believed by some administrators that unless the young physician can be taught a different regard for the patient, the nursing, and the departments with which he must find himself in daily contact, along with a disposition to meet his responsibilities with a more tractable attitude, that some plan must of necessity be devised that will do away with the present one now in force in many hospitals.

However, the plan now under consideration by the Council on Medical Education of the American Medical Association may assist in adjusting this situation. A list of hospitals accepted as teaching institutions, in which the hospital year may be given, will do much toward assisting all of the interested parties in reaching a solution of what now appears to be a very perplexing problem. Diplomas will not be issued until the graduate has served his hospital year in a satisfactory manner in an approved institution. This alone should do much toward insuring better work and curbing the tendency of the resident to override reasonable rules and regulations.

While the visiting staff may not have the last word in employing the hospital pathologist and bacteriologist, the duties of these laboratory men are so closely related to the proper working of the staff machinery that this department must be regarded as a part of the staff organization. The laboratory records, the scientific policy, the matter of promptly dispatching emergency work, the study of postmortems, and the development of research work, are all important factors in the general scientific activities of the institution. The hospital executive and staff must stand shoulder to shoulder in seeing that suitable men are employed and that team work is a feature. Otherwise the opportunity presents itself for a decidedly weak link in the chain of organization.

It is my opinion that the interests of the hospital are best served by keeping the staff as small as possible and the terms of service correspondingly long. There is noth-

ing gained by a large number of staff physicians with frequent changes, and the problems of organization are much simplified by a small staff with a long, continuous service.

The number of men on the staff will depend on several conditions, the principal one being the number of patients on the various services. However, the hospital should not impose on the time of the visiting physician by expecting him to spend more time in the free wards than he can afford. He cannot be expected to waste any of his time standing about the building waiting for a report from the laboratory, or for the blood pressure of a patient to be taken, or for a family history of another patient to be developed. As before indicated, these data should be handed him complete, arranged beforehand by the junior and resident. Information regarding a case should be so thoroughly prepared that the chief will be required to spend only from ten to twenty minutes with each new patient. The above is applicable to all services, and some such plan is positively necessary if the work is to be disposed of with precision and dispatch.

The demands made upon the staff service of the ordinary general hospital can usually be satisfied by dividing the scientific department into the medical, surgical and special services. The special services will include such lines of work as the eye, ear, nose and throat, obstetric, pediatric, and possibly others. Many specialties should be discouraged, for economical and other good reasons. Several factors might determine which should be the largest service in a given institution, but this does not particularly interest us at this time; for convenience of handling, the special cases can be grouped with the larger medical and surgical services. For instance, the eye, ear, nose and throat cases go well with surgery. Obstetric and pediatric cases are suited better to the medical side; nervous, genito-urinary and other special cases must be handled as the occasion demands. However, it is important that the staff machinery be not clogged with too many different special branches; it furnishes an excellent opportunity for discord and argument among the various services as to just what service a certain very desirable case should be assigned. Upon the chief of each principal service must be placed the responsibility for conducting its affairs in such a way that the professional and ethical standing of the hospital cannot be questioned. It is generally necessary for the chief to have a junior, and it is a good plan to let him make his own selection. The three physicians, the chief, the junior and resident, compose a service unit.

The chief must be a leader and must possess executive ability. His professional calibre should be such that he may be expected to serve on the active staff until he retires to the consulting staff, and is succeeded by his junior; provided, of course, that the junior's ability will warrant the promotion—and if it does not it is hardly worth while to retain him longer as a junior. This sort of plan may appear selfish, but it makes hospital efficiency, and that is the legitimate end of all our efforts. The chief should be so big and broad in his ideas that there will be no complaint from his junior and resident that they are not getting real work—that they are nothing more than "male nurses."

The junior should be trusted to make visits alone and should have the control of the resident and all routine work. During vacation time he should have temporary charge of the service. Under the direction of his chief he should do uncomplicated operations and in time should be perfectly competent to handle anything that may appear on the service.

The resident should gradually grow into the work. Under the supervision of the junior he should do all the dressings on the surgical service. He can soon, then, be trusted to close incisions, or to do the initial work for an appendectomy or herniotomy. It is surprising how fast he will learn. Before the chief realizes it, the resident will be able to handle, unassisted, much of the routine work.

The chief of the service should have unlimited power in all matters pertaining to his division. His word should be law. It cannot be otherwise if he is held accountable for the work assigned him.

The same plan may obtain in the medical division. Case histories and routine examinations should be developed by the resident under the supervision of the junior. Special examinations, such as blood work, heart tracings and kidney function tests can hardly be classed as routine, and the junior should be held responsible for this class of work. Under any and all circumstances the junior and resident must be encouraged and made to feel that they will be advanced and given additional responsibility just as their work will merit it. The long course of preparatory school work, in addition to the extended college course now demanded of medical students, almost precludes a physician from entering practice until he is well along toward thirty years of age. In order that the staff members may be advanced from junior to senior positions without too much delay, a retiring age of fifty or fifty-five is desirable. If a man receives his appointment as senior of a service at thirty-five, surely he should be willing to retire from active attendance with fifteen or twenty years of service to his credit.

Now for a closing word regarding a most important factor in staff organization and its relation to other hospital departments. I refer to team work. What shall be gained if a hospital has a perfect staff organization and yet cannot obtain the cooperation of the nursing service, or the department of dietetics; or if the resident service is incompetent or unwilling to dovetail its work with another department? A fixed, definite policy must be agreed upon by the several departments and each must do its part toward carrying it out to the letter. The various staff divisions should confer, when necessary, regarding borderline cases. One large hospital in Philadelphia has a scheme of ward conferences. At regular stated times a surgeon, and the entire medical staff on duty at the time, with possibly a member of the consulting staff, meet and study cases presenting interesting problems in diagnosis and treatment. These are fully discussed from the different angles. The residents are invited to attend these conferences and are greatly benefited by them. In addition, a cordial fellowship between all is promoted.

The staff, or a committee composed of staff members, should meet at regular intervals with the superintendent and discuss and determine the scientific and economic policy of the institution. Preventive medicine, the problems of occupational and industrial diseases, social service, the relation of contract practice to the staff and hospital, are but a few of the many questions that are today occupying the attention of our institution administrators.

There are several other phases of staff organization that should have had consideration in this paper. The fifth, or so-called hospital year, will be demanded of graduates of many of our best schools. The plan adopted by at least one hospital of paying a salary to the chief of each staff division and asking continuous service; the question of an open or closed staff; these are all very important matters, and sooner or later every hospital must find itself face to face with them.

## The Training School[1]

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The theme of this paper has so wide a range and in all probability is so well understood in its various aspects by this audience that it has been exceedingly difficult to know what to say. I have elected to present to you a word sketch of a real training school, its organization and component parts, its guiding principles and the methods by which it prepares suitable young women to become leading members of one of the noblest professions open to women—trusting that you will pardon this repetition of much that is elementary to you.

The Michael Reese Hospital and Training School for Nurses, in Chicago, is the institution in whose atmosphere I have acquired most of my views on this subject, and for the many details to follow I am greatly indebted to the school superintendent, Miss Elizabeth C. Burgess, R. N. (N. Y.), the assistant superintendent, Miss Charles, and to each of the department heads as well.

The training school consists of a superintendent, assistant superintendent, an office force, including a teacher, thirteen paid clinical supervisors (graduate nurses), a dietitian, domestic science teacher and two social service investigators. There are from fifteen to thirty probationers, ninety pupils, ten seniors from affiliated schools, about five post-graduates doing special work, and fifteen nursery maids.

The three-year course includes practical experience in medicine six months, surgery six months, obstetrics three to four months, gynecology one and one-half months, children and infants three months, private patients three months, diet kitchen one month, operating room four months, supply room one month, and night duty three periods of two months each. Vacation of six weeks in two periods; and the remaining six months is devoted to specialization, executive training and social service work.

The problem of the training school begins with the selection of the applicant. Who shall be eligible? As you are all aware, it is not so many decades since nursing was in the hands of whomsoever saw fit to announce themselves as nurses; but the standards have gone up here, as in every other walk of life, and the applicant must have qualifications far higher than in olden times.

Needless to point out the candidate must be of good moral character. Included in this, and especially worthy of emphasis, is her conscientiousness. She must be healthy. How important this is only those of you can appreciate who have seen latent flaws reveal themselves under the stress and strain of the hard daily grind. The victims of unsuspected heart lesions, the incipient goitres, the gastro-intestinal ailments, the broken arches, the diseased tonsils and teeth, must be watched, gauged and if necessary eliminated from the probationers by your examining physicians, in justice to the applicant herself, lest her health be permanently shattered by the three years of strenuous work and discipline. She must have a proper preliminary education. This is set at a four years' high school course, or its equivalent, by the best training schools, and when one considers what the trained nurse of today is expected to grasp and understand, that is not too high a standard. Twenty is commonly held to be the youngest age at which the average probationer has the necessary poise and maturity to justify the demands that will be made of her.

The accepted applicant enters a period of three months' probation. This is vitally essential. It enables the responsible heads to form a fairly good judgment of the candidates and helps the probationer to crystallize her own feelings and desires.

During this period the candidates receive the following instructions:

Six classes, 2 hours each, in bandaging; 24 classes, 1½ hours each, in anatomy and physiology; 8 classes, 1½ hours each, in bacteriology; 12 classes, 1 hour each, in solutions, including simple arithmetic and the metric system; 8 classes, 1 hour each, on personal and domestic hygiene; 6 classes, 2 hours each, on elementary dietetics with practical lessons; 1 study hour daily, and 2 to 3 hours daily of practical work in the wards and supply room; 24 classes of 2 hours' duration.

Each finished lesson is practiced in the wards under supervisors. The subjects covered may be briefly enumerated as follows:

The making of an empty bed; the making of a bed containing a patient (a dummy is used in these lessons).

The significance of hospital dusting, using warm water, green castile soap, ammonia, a soft cloth and elbow grease —never sapolio on enamel and never dry-dusting.

The importance of closing the window, not exposing the patient, moving the patient as little as possible and turning the patient toward the nurse; warming the clean linens and making the bed firm and tight.

The care of the bed after the patient leaves the hospital: washing with 5 percent carbolic acid or 2½ percent formalin, and soaking linens two hours in infectious cases.

The daily care of the patient: washing the back with hot water and soap, rubbing with 50 percent alcohol and powdering with talcum. If red, using stearate of zinc; avoiding cotton pads; turning frequently and if heavy or perspiring treating the back repeatedly, using air-cushions and even an air mattress. (Since these cost $30 to $40 no pins should be used near them.)

Cleansing the mouth with swab sticks, getting into all the crevices.

Inspecting the hair daily, especially after visiting hours, and combing daily (by the patient, if able).

The cleansing bath, with hot water: placing patient between blankets, turning as little as possible; washing a small area at a time, as speedily and carefully as possible, not omitting hair and nails.

Handling of bed pans; avoiding hitting the coccyx by lifting with one hand under the sacrum. Never set a pan on the floor. Pans to be boiled daily.

The operative bed: must be hot, with a woolen blanket next the patient. There must be no draughts and the nurse must watch the pulse, recording same every half hour, also the color, the accumulation of mucus in the throat; and must get help as needed.

The fracture bed: linens to be smooth and a fracture board over the springs, the full size of the springs, and perforated. The Bradford frame for spinal and hip cases and especially for children.

Washing hair in bed: requires only turning the patient on the side and arranging a rubber apron around the neck behind and over the side of the bed.

Arranging a patient for sitting up in bed: all parts, especially the arms, must be supported; a knee roll used and a sling for the feet if desirable. The patient must be warm and pulse noted before, during and after sitting.

Admitting a stretcher case: temperature, pulse, respiration, and bath according to condition of patient. Specimen of urine to be obtained. Note all marks, burns, bruises and deformities; clothing and valuables must be listed,

[1]Read before the Hospital Sisters' Conference, Milwaukee, June 25, 1915.

mentioning everything, and if taken away must still be listed and signed for by party removing them.

Enemata: water 100°, no air in tube; patient on left side. Nutritives: no air in tube; patient comfortably placed first and after removing tube, making pressure against anus.

Plasters: mustard must be fresh and the water only warm; diluting with flour as desired. Flaxseed dropped into boiling water, thickening until it drips clean from the spoon, then turning out the flame, beating to make it light and oiling the skin. Folding and tucking free end in; on removal patting the skin dry and powdering. Turpentine stupes, either equal parts turpentine and oil applied and covered with hot blanket cloth, or turpentine one teaspoonful to boiling water one quart (turning out flame), oiling the skin and wringing out fresh hot cloths every five minutes for twenty minutes in each hour.

The keeping of charts: the time of each recording; the necessity for recording everything, including the most trivial symptoms, with intelligence and brevity.

Gastric lavage in bed and with the patient's back supported, and both patient and floor protected.

Transferring helpless patients, supporting arms and head and all lifting together.

The changing of a mattress by shifting the patient onto a row of pillows.

The hot pack: avoidance of burns; never placing a hot bag over a moist dressing. Cold cloths to the head and control of the pulse.

Preparing a patient for examination in various positions, dorsal, lithotomy, knee, chest, Sims, without undue exposure.

Catheterization: its asepsis and technic.

Surgical dressings: convenience of arrangement to obviate necessity for reaching on the part of the physician, thus affording greater speed and certainty of asepsis.

Preparation of croup tents with precautions for the alcohol lamp if used.

Care of the hypodermic tray, including the proper way of giving various kinds of hypodermics.

The accepted pupils now have before them two and three-quarters years of arduous but intensely interesting work, and one of the big tasks of the school superintendent is to lay out the curriculum so that each nurse gets adequate minimal training in all branches, and special training in the branch of her choice when possible, maintaining a proper proportion of experienced and inexperienced nurses in all departments at all times.

The attainment of this ideal is of course most easily reached in the general hospitals, but by a system of exchanges with credit the hospitals which lack certain departments can provide their pupils with the full clinical curriculum. The Michael Reese Training School has affiliates in the maternity and children's building, postgraduates in the children's building and operating room, and nursery maids, who take a year's training, eight months in the children's building and four months in the maternity nursery.

It may not be amiss at this point to outline briefly for you the routine and special instruction in the various departments by which the young pupil gradually gets an increasing responsibility and eventually becomes a capable, self-reliant graduate. Certain qualities are sought for and encouraged throughout the school, such as conscientiousness, power of observation, cheerfulness, patience, tact, noiselessness. The lessons of the probation months are firmly fixed, and dominating all are the watchwords efficiency and asepsis.

Class work is continued on a greatly reduced scale, juniors receiving about 5 hours of theory and practical class instruction per week, intermediates and seniors about 4 hours per week; classes in pediatrics are repeated every four months to accommodate the many affiliates and postgraduates, and all practical work is taught in small sections.

In the wards each nurse is assigned certain work, according to her experience, and this she does first each day before assisting in any other work. Cleanliness and neatness must be maintained, paper bags being supplied each patient for refuse. Patients on liquid diet are fed at stated hours. Chart recording is done by the nurse directly concerned, except in the maternity, where, for special reasons, one nurse enters up all ward records.

The operating suite, consisting of three main rooms, two specials, a nose and throat room, a genito-urinary room, and three rooms in the children's building is run by a head nurse, two permanent paid assistants and eight pupil nurses, chiefly seniors. Each pupil passes through the following stations:

1. Preparatory room, where under an experienced nurse she learns the positions, dorsal, lithotomy, Trendelenburg, Sims, gall-bladder, kidney and goitre, and the practice of asepsis in preparing the field of operation.
2. Junior in nose and throat cases; here she helps.
3. Senior in nose and throat cases; runs the cases.
4. Care of gloves. Each pair is placed in an individual bag, unfolded. Supplies: The nurse scrubs up before preparing any sterile supplies. Care of instruments, names, matching, uses and preparation of trays for set operations. Sutures of all kinds, wax silk, plain silk, silkworm, horsehair, Bartlett's catgut and VanHorn catgut.
5. Junior in operating room; here she helps.
6. Senior in operating room; runs minor cases.
7. Senior in operating room; runs major cases.

Here, especially, does the nurse learn self-reliance, alertness, deftness, and the special technic and peculiarities of her various attending surgeons.

Maternity pupils receive training first as juniors or intermediates and again as seniors, each time for about two months. Here, as in the operating suite, asepsis is preached continually. In the ward the nurse learns how to apply breast and abdominal binders, the nipples being cleansed with a boric acid swab before nursings and covered with a sterile cloth between nursings, the breasts being supported upward and all safety pins placed in a vertical row, slightly overlapping. Vulvar pads made of a layer of absorbent and another of unabsorbent cotton rolled with the absorbent cotton inside, wrapped separately and sterile; must be handled when open only on the unabsorbent side, the absorbent side being placed next the genitals. The lochia should never soil the bedding. Bed pans are boiled daily and after each evacuation, and with each use the genitals are cleansed by pouring lysol solution. Temperatures are taken per rectum with patient lying on side, at the same time inspecting the perineum. All blankets and mattresses are sterilized from time to time.

In the maternity nursery babies are stripped and inspected daily, guarding the cord from contamination. At this time each baby is placed on its own towel, and in the daily weighing the scale pan is completely covered with a towel for each baby. The bathing proceeds from the head downward, leaving the boric cleansing of the eyes for the last. Any suspicious case is kept in the quarantine nursery.

In admitting a case the nurse asks as to pains, their

location, frequency and character; whether the membranes have ruptured, presence of a bloody discharge and the number of the pregnancy. If the pains are not severe the patient receives an enema, then a bath, given with patient sitting on a spring seat covered with a towel. In the labor room the genitals are shaved, a specimen of urine is obtained, the nipples are cleansed again with 1-6000 bichloride of mercury.

Observation here includes frequent noting of heart tones and always immediately after ruptures of membranes. Description of pains. Genitals kept protected by sterile combination, which is held from sliding forward. Patient kept in bed unless ordered up. Toilet facilities limited to use of jar with bottom covered with toilet paper.

Running a case begins with the scrubbing of the patient by a nurse who has first scrubbed up herself. The genitals are cleansed first, then the thighs and lastly the anal region and the whole area is thoroughly rinsed by pouring lysol. The nurse again scrubs up and lays out her sterile linens and routine supplies, which she later places at the foot of the bed, according to a very definite routine. All other instruments are kept sterile, ready and sealed.

The new babies' eyes and cord receive prompt attention and the fundus is held thirty minutes after the placenta is delivered before applying a binder. Women in waiting have temperature, pulse and heart tones taken three times daily; those delivered have temperature and pulse three times daily in normal cases.

In the children's building children and infants remain in the observation wards at least three days. In the daily bathing here and later, the skin is examined for eruptions, the ears, mouth, navel and vulva for odors or discharge, and in washing boiled soap is used, making few suds and avoiding the ear canals.

On admission every patient gets a tub bath, a parasiticide application to the head, and if there is a temperature of 103° rectal, ice bag to head, hot water bag to the feet and awaits doctor's orders.

In lap bathing of infants, each babe is held on its own towel and the nurse washes her own hands between cases. Babies with colds, running ears, etc., are separated.

Neatness of child and ward are maintained at all times. Food is served individually, the kind and amount taken is noted, and, where necessary, vegetables are served first. If the child vomits it is fed again. If one baby chafes that is treated *per se*. If several chafe, rinsing of the diapers is investigated and if they are found acid to litmus this places the blame on the laundering.

Charts are kept very accurately, keys being used to facilitate the recording. There are enough nipples so that each infant has one for each feeding for the day. The nurse is never permitted to handle the nipple tip. Used nipples are rinsed in cold water, boiled in soap and water, rinsed again and boiled in water with sodium bicarbonate.

Thermometers are individual, and like rectal tubes are lubricated only with water. Toys are never interchanged, paper and other destructible toys being preferred. A kindergartner is in daily attendance, teaching the nursery maid and such nurses as are interested in ways of amusing children.

Cases of communicable diseases arising anywhere in the hospital are sent to the isolation building with that exposed nurse who has had the particular disease.

In the diet kitchen and milk station the nurse receives special drill from the heads of these important divisions.

In the care of private patients it becomes necessary to speak of seeming trivialities. But these are the very things that mark the trained nurse. The daily routine is as follows: in the morning the room air is freshened, the bed pan is brought warm, patient's hand and face washed, tooth brush brought, drinking water supplied, and then breakfast is served. Bath given between blankets, avoiding drafts, followed by an alcohol rub and a rest. (The nurse must be sure her own hands are warm.) The bed is made up. The 10 a. m. lunch is served. Dinner at twelve, followed by a rest. Visitors are controlled as to the length of stay and number, according to the doctor's orders. Supper at 5, followed by a wash, back rub, straightening up of bed and room, shade drawn, light arranged for reading, phone muffled if desired. Medication and treatments as written in the physician's order book.

Trays must be constantly supervised, stress being laid on quality and daintiness rather than quantity. Gargles, egg-nogs and milk partially consumed, water pitchers, etc., must be kept covered. Priessnitz dressings should not be too wet. Place patient on a draw blanket. Make sure the extremities are always warm, avoid drafts when up and make the first time up very brief. Pay special attention to separating dishes, etc., in infectious throat cases and in operative nose and throat cases. The abdominal posture reveals hemorrhage, which should be controlled by ice applications until further orders.

Answer calls promptly even if unable to render service at the moment. Convey all complaints, however trivial, to the head nurse. Discourage in every way possible the circulation of gossip from room to room.

Didactic teaching has its place in the curriculum of the undergraduate nurse, the more so since the states have begun to standardize nurses, hold examinations and give the degree of R. N.

I am sure we are all agreed that bedside nursing is the true function of the trained nurse, hence a nice discrimination must be shown by those responsible for the didactic curriculum. The happiest solution, I believe, is to place the pre-medical and medical courses in the hands of a permanent teaching corps, chosen from among the members of the attending staff who should be best qualified to pick out for the classes those salient facts that will aid the nurse in an intelligent grasp of her duties and obligations without burdening her with strictly medical data.

Limitations in time prohibit a discussion of certain phases of training school life which are too important not to mention, such as the home life, food, exercise, sleep and the social side.

And now I arrive at the heart of the problem. The master word in the successful training school is efficiency, and the efficient training school is that school headed by a broad-minded, progressive superintendent, assisted by able department heads, and whose pupils are likewise under the daily, I might say the hourly, guidance and precept of a willing and competent attending medical staff. These are the men or types of men with whom and for whom a graduate nurse must work, and the more closely her undergraduate activities are coached by them the more efficient will she become in the practice of her profession.

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At the recent annual convention of the Montana Graduate Nurses' Association, held in Great Falls, officers were elected as follows: Miss E. Augusta Ariss, of Great Falls, president; Miss Van Leuvanee, of Helena, first vice-president; Sister Mary Corona, of Butte, second vice-president; Mrs. I. C. Benson, of Fromberg, corresponding secretary; Miss Mary Denny, of Great Falls, recording secretary; Miss O'Brien, of Butte, treasurer. Miss Margaret Hughes, of Helena, was elected delegate to the national convention in San Francisco. Helena was selected as the next annual meeting place of the association.

# CURRENT HOSPITAL LITERATURE

ALBERT ALLEMANN, M. D., Foreign Literature.
*Army Medical Museum and Library, Office of the Surgeon-General United States Army.*

**The Penetration of Formaldehyde Vapor in Steam Disinfectors, With or Without Diminished Pressure.** Dr. Otto Mayer, Bacteriological Institute, London. Lancet-Clinic, Cincinnati, Feb. 6, 1915.

Dr. Mayer writes of an apparatus which he has recently designed, by which formaldehyde gas is let into both sides of the sterilizer, the vapor being generated from a formalin lamp. He thinks that perfect sterilization—that is, the destruction of micro-organisms—can be accomplished without the very high temperatures that have been heretofore considered necessary; but there are many technical difficulties which he is now engaged in attempting to solve.

**British Water Ambulance.** The Nursing Times, London, 1915, Vol. XI, No. 519.

The War Office has taken over six barges at Rouen and equipped four as hospital barges, one as a staff barge and one as a general store barge. Each hospital barge contains fifty large-sized hospital beds, a surgical dressing room, linen room, storeroom and well-equipped kitchen. They are well ventilated, heated, and fitted with electric lights. Specially constructed skylights admit ample light during the day time. The floors are covered with linoleum. A specially fitted operating theater has been provided on one of the barges with a hoist for lowering the patients, thus avoiding any unnecessary jolting. The hospital barges are connected by telephone with the staff barge, which contains separate mess rooms for doctors and nurses, and cubicles for the medical and nursing staff, together with an office, bathroom and kitchen. The staff on board this water ambulance, including doctors, nurses, orderlies and cooks, numbers about sixty.

**The Princess Christian Hospital Train.** The Nursing Times, London, 1915, Vol. XI, No. 519.

This train, recently sent from London to France, is built and equipped so that it can, if necessary, be used as a stationary hospital on wheels. The first coach contains an office and bed for the quartermaster-sergeant, partitioned off from a ward, with accommodations for 30 patients. Numbers 2 and 3 have each 36 beds with lavatory in center and lockers in the four corners. Number 4 has beds for 12 orderlies, with two lockers and lavatory, a kitchen fully equipped, and beyond this a spacious storeroom for linen. Number 5 affords sleeping accommodation for the nurses, adjoining which are two compartments arranged for nurses' and doctors' dining rooms; next to these is the office of the principal medical officer, adjoining the surgery, followed by a sleeping room for the doctors. Numbers 6 and 7 are similar to numbers 2 and 3. Number 8 contains accommodation for 12 orderlies, a kit store and a second kitchen, chiefly intended for hot water and small cooking. There are also, at the request of the War Office, four other coaches for "sitting-up" patients. Each coach can accommodate fifty patients, and folding tables between the seats have been provided for meals.

**Institution for Infants.** The Canadian Nurse, 1915, Vol. XI, No. 5.

Infants should be kept in a hospital for only a short time, carefully guarded from auto- and hetero-infection while there, and finally, to insure good convalescence, sent out to recuperate under as favorable conditions as possible. The Hospital for Sick Children, Toronto, has established its Infants' Department with these ideas in view. This unit has accommodations for approximately 60 infants and is divided into small and large glass cubicles with central corridor between the cubicles. The small cubicles accommodate 2 to 3 infants, the large 4 to 5, and each cubicle has its own ventilating, heating and water system. A nurse is supplied for every two children and all the infants are attended to in their own cubicle, thus eliminating contact with infants from other cubicles. Children suffering from pneumonia, meningitis, etc., can be treated in the same ward, inasmuch as they are separated by glass cubicles, which reduce the spread of infection to a minimum. The equipment of this "infants' hospital in small units" is complete, including accommodations for two wet nurses, premature room, dressing and minor operating room and milk modifying laboratory.

**Cooling Apparatus in Hospitals** (Ueber Kühlanlagen in Krankenanstalten). A. Klaffke. Zeitschrift f. Krankenanst., Leipzig, 1915, XI, No. 7.

The author first gives a historical review of cooling devices in ancient and modern times. All these forms of apparatus were of a primitive order. A complete revolution in this field was brought about by the invention of ice and cooling machines. Artificial cold may be produced by the following methods: (1) By liquefying a solid body (salts). (2) By expansion, i. e., expansion of compressed gases. (3) By evaporation, i. e., by converting a volatile liquid (ether, ammonia, sulphurous acid, carbonic acid) into a gaseous form. The ammonia, sulphurous acid and carbonic acid machines are the most practical. They were at first only used in large establishments, as cold storage buildings, breweries, etc., but smaller machines are now constructed for hospitals which are very practical. The question of expense has been solved by introducing cold-accumulators in the cooling room.

The author gives a detailed description of the cooling plant in the great Elberfeld hospital. It consists essentially of (1) an evaporator, in which the cold-producing liquid (in this case liquid carbonic acid) is evaporated, (2) a condenser, in which the cold-producing liquid is condensed, and (3) the compressor, which forces the carbonic acid vapor from the evaporator (cold-accumulator) into the condenser to be liquefied. The compressor has a double action, suction and compression. It sucks the gaseous carbonic acid from the evaporator (cold-accumulator), condenses it and forces it in a gaseous form into the cooling worm of the condenser, where it is converted into the liquid form by the continuous flow of the cooling water. The liquid carbonic acid collects in the lower portion of the cooling worm and is carried to the regulation valve, which passes the liquefied carbonic acid to the pipe system of the accumulator. In the cooling worm of the accumulator the carbonic acid is evaporated and withdraws heat from the salt water. The carbonic acid is then sucked up by the compressor and condensed. In this manner the car-

bonic acid passes through an endless circle from the liquid to the gaseous state and back again; there is no waste of carbonic acid in this process. The condenser is a cylindrical tank, which contains the spiral worm. The cooling water enters below and flows off above, while the carbonic acid passes through the spiral tube from above downward. The cold-accumulator consists of a sheet-iron tank filled with salt water and containing the cooling worm. The carbonic acid entering through the regulation valve evaporates in the spiral tube of the accumulator and thereby cools the salt water. Such an apparatus is of great value in a modern hospital. The conservation of food materials and the prevention of their being spoiled will soon pay for the plant. The article is accompanied by six diagrams.

**The Right to Perform Operations in Licensed Private Hospitals** (Das Recht zur Vornahme von Operationen in konzessionierten Privatkrankeranstalten). Zeitschrift f. Krankenanst., Leipzig, 1915, XI, No. 9.

The Federal laws of Germany require a license for all private hospitals. A right to perform operations is not necessarily implied in such a license. If a permanent operation room is established in such an institution a special license is necessary. Some time ago it happened that an operation was performed in a sick-room of a private hospital which did not possess an operation room. The case was carried to the courts, but the latter decided in favor of the hospital, as the law is obscure on the point in question and does not mention operations in sick-rooms. The court held that in emergency cases an operation may have to be performed in a sick-room in the interest of the patient.

**The Hospital Population of the Principal Cities of Italy** (La popolazione ospedaliera delle principali citta italiane). Rivista ospedal., Roma, 1915, V, No. 2.

The cities whose hospital accommodation is more than 1,000 beds are Milano with 4,028, Rome with 3,274, Turin with 1,857, Genoa with 1,488, Venice with 1,483 and Florence with 1,030 beds. There are ten cities with more than 500 beds, fourteen cities have more than 300 beds, and six cities have more than 200 beds. Copenhagen is at the head of all European cities with regard to the number of beds as compared with the number of inhabitants. The capital of Denmark has one bed for every 106 inhabitants. Then follow Rome with one bed for every 129, Hamburg with one bed for every 140, Paris for every 180, Berlin for every 201 and Vienna for every 247 inhabitants.

**Preventive Measures Against the Importation and Spread of Typhus Fever** (Massregeln zur Verhütung einer Einschleppung und Verbreitung des Flackfiebers). Zeitschr. f. Krankenanst., Leipzig, 1915, XI, No. 13.

As typhus fever has broken out in the Russian army, this terrible disease does not only threaten the German armies in the east, but there is also danger that it may be imported into Germany through the numerous Russian prisoners. To obviate such a calamity the Minister of the Interior has published rules and regulations for the prevention of typhus fever. Typhus fever patients and persons suspected of having the disease are to be isolated in special hospitals. As the disease is transmitted through lice all patients and persons suspected of having the disease must at once be freed from this vermin. This can be done by exposing the clothing to live steam or to sulphurous acid vapors. The head of the patient is to be shorn closely and treated with gray ointment. Physicians and nurses in typhus fever hospitals must protect themselves against infection by wearing rubber shoes and rubber gloves. It is recommended that they tie their garments closely around the wrists and ankles to prevent the penetration of disease-carrying vermin.

**Experiments in Vermin Destruction** (Versuche zur Vertilgung von Ungeziefer). Dr. E. Wiener. Wien klin. Wochenschr., 1915, XXVIII, No. 4.

In trying to cleanse 28,000 Russian prisoners, who were infested with lice to an enormous degree, it was found that the lice kept alive under water for hours at a temperature of from 70 to 80° C. In a bichloride solution (1:1000) they kept alive for 40 minutes. Sulphur dioxide and formaldehyde vapors were also tried without success. The only successful method was streaming steam, which killed the vermin at a temperature of 102-103° C. The clothing of the men was tied in separate bundles, numbered and cleansed in Thursfield steam disinfectors. The men took a half-hour bath in a large basin filled with a warm bichloride solution (1:1000) and immediately entered their new barracks, where they were handed new underclothing and their bundle of clothes.

**Cooking Apparatus** (Kochanlagen). E. Mattheus. Gesundh.-Ingenieur, München, 1915, XXXVII, No. 13.

In former times it was practically impossible to cook large quantities of food for a great number of people satisfactorily. But a change took place by the introduction, toward the end of the last century, of the so-called water-bath cauldron, which consists of two Papin pots built into each other. The food is cooked equally, without stirring, and almost without any supervision. Burning of the food is impossible. The inner cauldron is usually made of iron, or, if possible, of pure nickel. Cooking by steam heat with a steam tension of .3 to .5 atmospheres is now most widely practiced. In hospital kitchens tubings should be hidden from view for esthetic as well as for hygienic reasons. The steam-conducting pipes should be placed in cellars or in accessible spaces under the kitchen floor. As a third method of heating may be mentioned gas heat in hospitals where steam heat is not available. The cauldron for gas heat is constructed similarly to that for steam heat and may be fitted out with or without the water-bath.

**Dispensaries for Smaller Hospitals—Why We Need Them.** Michael M. Davis, Jr., Director of the Boston Dispensary. The Trained Nurse and Hospital Review, 1915, LIV, No. 6.

Every hospital should exist for the benefit of the community, and yet the superintendent is justified in considering the immediate interests of his or her particular hospital, and asking the question, "What will an out-patient department do for the hospital itself?" Mr. Davis answers this question with the statement that "The dispensary feeds, follows up and forestalls the hospital—it feeds the wards; it follows up discharged patients, preventing recurrence of disease and promoting hospital efficiency; it forestalls serious disease by treating it in early stages, promoting economy of hospital service."

Experience has taught the director of the Boston dispensary that adequate service cannot be maintained for less than 25 cents per visit—this unit of cost being obtained by dividing the total expense of the out-patient department by the whole number of visits paid by all patients. Although an out-patient department can neither be run for nothing nor next to nothing, appeals for funds receive response because the obvious relief of suffering given to large numbers makes such appeals both concrete and strong. Briefly, Mr. Davis is convinced that a dispen-

sary, well managed and intelligently and persistently kept before the public, should prove an asset, not a burden, upon the hospital which maintains it.

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**Heating and Ventilation of Military Hospitals, Barracks and Similar Establishments by Fresh-Air Ventilation and Heating** (Heizung und Lüftung von Lazaretten, Baracken, und dergleichen durch Frischluft-Ventilationsheizung). F. H. Heilanstalt, Leipzig, 1915, X, No. 3.

On account of the great war buildings of various kinds have to be converted into hospitals. In such cases heating and ventilation is always a great problem. The modern hot-air heating system seems to be the most suited for such establishments, as it accomplishes at the same time both purposes, heating as well as ventilation. The source of heat is a special modern hot-air furnace with smooth vertical heating surfaces. The fresh air is obtained from the outside and is first conducted to a dust deposit chamber. Then the air is carried by suction to the space between mantle and oven of an ordinary hot-air furnace. At the top of this furnace is a hot-air collector from which the warm air is carried through stove pipes to the various rooms. The entrance opening in the room is provided with a regulating apparatus, while the exit of the consumed air is similarly regulated.

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**Should the Function of Antitubercular Dispensaries be Merely Prophylactic or Also Curative** (La funzione dei dispensari antitubercolari, dev' essere solo profilatica o anche curativa)? Dr. Ronzoni. Tubercolosi, Milano, 1915, VII, No. 7.

Discussing this question before the Health Association of Milan, the author holds that an antitubercular dispensary should be essentially an institution of prevention. Therapeutic measures belong to special hospitals and should not form a part of the dispensary work. The dispensary is a medico-social institution for the protection of the individual and of society against tuberculosis. Its work consists in detecting tuberculous persons and especially incipient cases, in studying the spread of tuberculosis in a given center and the laws governing it, in forming an individual and collective antitubercular conscience among the people, in drawing up tuberculosis statistics and in promoting the knowledge among the people concerning the means of preventing tuberculosis especially as regards isolation, hospitalization and protection of childhood. For the treatment of tuberculosis the author recommends special institutions intimately connected with the dispensary.

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**The New Office of Sanitary Statistics of the Hospitals of Milan** (Il nuovo ufficio di statistica sanitaria degli istituti ospitalieri di Milano). Dr. E. Ronzani. Ospedale Maggiore, Milano, 1915, III, No. 2.

At a meeting of the hospital superintendents held at Rome in 1911 it was found that in Italy only the hospitals of Rome, Genoa and Parma published sanitary statistics. The hospitals of Milan had so far kept only incomplete records of the sick movement, which were of little practical value. An office has now been established to collect statistical data in all the city hospitals. The office uses the classification of diseases adopted by the Italian hospital superintendents in 1912 (providing for 14 groups and 320 diseases). The same form is used in all hospitals. This form is divided into two parts. The first part is filled out at the entrance of the patient and contains name, age, trade, residence and date of entrance. The second part contains the ward in which the patient was treated, the disease with the corresponding number of the classification table, results of the treatment and number of days the patient stayed at the hospital. When the patient leaves the hospital his record is sent to the statistical office, where the data thus furnished by all the hospitals are worked up in general statistical tables.

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**Hospital Efficiency From the Standpoint of a Hospital Surgeon.** R. L. Dickinson. Boston Medical and Surgical Journal, CLXXII, No. 21.

The status of the intern is referred to as chaotic; the consultants, we are told, do not consult, and many trustees are accused of "taking it out in trusting." Lack of time, lack of organization, lack of instruction, lack of inspection and lack of publicity are stated to be the five inefficiencies for which, fortunately, remedies are proposed. Many of the factors tending toward standardization that are now being worked out receive attention and an excellent form of detailed report on efficiency of each member of the professional staff is submitted. A central board on standards, experiment stations, a library and a museum of standards are suggested as the four requirements necessary to cover adequately the subject of the efficiency of the hospital and its professional work.

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**The Relation of Alcohol to Accidents.** William J. Brickley. Boston Medical and Surgical Journal, CLXXIII, No. 20.

The Haymarket Relief Station of Boston treats about 40,000 patients annually, coming from the emergencies arising in three general groups—the industrial, the transportation and the residential. Dr. Brickley, the resident surgeon of this hospital, states that 40.6 percent of the adults who died there from accidents during the past four years were distinctly alcoholic at the time of the injury. The following conclusions the doctor bases on his experience at the Haymarket Relief Station:

1. Alcohol causes accidents.
2. Alcohol obscures diagnosis.
3. Alcohol increases the danger of infection at the time of the accident.
4. Alcohol prevents adequate treatment.
5. Alcohol increases the danger of intercurrent complications.
6. Alcohol retards the process of repair.
7. Alcohol gives a poorer end result.
8. Alcohol increases the mortality in accidents.

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**Alcoholism and Insanity** (Alkoholismus und Irrsinn). Phychiat.-neurol. Wochenschr., Halle a. S., 1915-16, XVI, No. 49.

To what extent alcoholism is a causative factor in insanity is shown in the latest report of the Commission for the Insane of the city of Berlin. Of 449 epileptics admitted to the Wuhlgarten hospital 316 were alcoholics, of 25 patients suffering from hysteria 14 were alcoholics and of 31 hystero-epileptics 21 were drunkards. During the fiscal year 1914, 3,201 persons were admitted to the hospitals for the insane at Dalldorf, Herzberge, Buch and Wuhlgarten; of this number 479 patients suffered from chronic alcoholism.

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**Enterprise in American Hospital Management—The Hutchinson Museum and Its Lessons.** The Hospital, London, 1915, LVIII, No. 1507.

Noting with regret that the clinical museum established by the late Sir Jonathan Hutchinson is to be lost to England by its transference to the Johns Hopkins Hospital, our confrère assures us that though keenly conscious of a sense of loss, he bears us no grudge and could not wish it a more worthy home than "the great post-graduation school of the United States."

# INDEX OF HOSPITAL AND SANATORIUM LITERATURE

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# DEPARTMENT OF NURSING

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## Urine Analysis for Nurses

BY HENRY F. KEEVER, M. D.,
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### THE URINE IN DISEASE

In conditions of disease the urine is one of the most important keys to diagnosis. Its examination is essential and often in cases where there seems to be not the slightest relation to the genito-urinary tract we may find the kidneys at fault. This is particularly true in all cases of coma, for there are two kinds of coma which are due directly to involvement of the kidneys, viz., diabetic coma and uremia. In diabetic coma the urine usually gives a strong positive sugar test, and always we find acetone and diacetic acid. In uremia the urine contains large traces of albumin. These specimens often must be catheter specimens.

*Amount in Disease.* Increased amounts of urine may be passed in the following cases:

1. Some forms of nephritis.
2. Diabetes, 400—10,000 cc.—20 pints.
3. In some diseases of the nervous system, as hysteria and convulsions.
4. There is often a temporary polyuria due to mental excitement.
5. Some drinks, as beer, wine, tea and coffee, increase the quantity of urine more than the amount of water they represent.

Decreased amounts of urine may be passed in the following cases:

1. Fevers, when much water is lost through perspiration and through the lungs.
2. Acute nephritis.
3. Retention in the bladder, due to stricture, calculi or hypertrophied prostate.

*Color in Disease.* Color varies according to the degree of concentration, ranging from straw yellow, reddish brown to brown black. Patients with jaundice have a dark urine, which, when tested with a few drops of tincture of iodine, show a characteristic greenish bile ring.

Blood in the urine, such as we usually find in acute nephritis, stains it brownish red.

Fever urines are usually dark, or high colored, as we call it, owing to concentration.

Drugs may color the urine. Santonin colors the urine yellow or greenish yellow, with a yellow foam. Carbolic acid and tar preparations cause a greenish or greenish-black color.

Urine that is turbid when passed is generally pathological. This is true in nephritis because of the formation of organic constituents, and in all diseases of the urinary passages, especially in severe cystitis. Blood and pus mixed make the urine turbid. The rarest kind of turbidity is that caused by fat in the urine, viz., chyluria.

*Specific Gravity in Disease.* The specific gravity in disease varies from 1.000 to 1.060. It is always high in diabetes. A high specific gravity with a clear, abundant urine points to diabetes mellitus.

*Reaction in Disease.* A neutral or alkaline urine is met with in sickness under the same conditions that make it neutral or alkaline in health.

1. Due to admixture of blood and pus.
2. Due to alkaline fermentation in the bladder, as in cystitis.

*Odor.* In acetone we get a fruity odor, and in cystitis an odor of ammonia.

### GLYCOSURIA

The presence of glucose in urine is no more synonymous with diabetes than the presence of albumin is with Bright's disease; but diabetes is the condition which most commonly causes glycosuria. Diabetes is now assumed to be a disease of metabolism which prevents the conversion of the carbohydrates into their simpler elements. The anatomic site of the lesion is usually the pancreas. Several other causes may produce glycosuria.

1. *Alimentary Glycosuria:* due to an excess of carbohydrate in the food, notably excess of candy or sugar.

2. *Medicinal Glycosuria:* due to drugs, as chloroform, amyl nitrate, inhalation of illuminating gas.

3. *Secondary Glycosuria:* accompanies cirrhosis of the liver, head injuries, apoplexy, paresis. It may occur during pregnancy and in the course of acute infectious diseases.

Always suspect sugar in urine if the specific gravity is high, especially if it be normal in color and abundant.

*Test for Sugar: Fehlings.* This is the copper test, most commonly used. It depends on the power of glucose to reduce copper oxide in an alkaline solution.

Equal parts of a solution of copper sulphate and alkaline solution of sodium potassium tartrate are mixed in a test tube. Take about 5 cc. of each, heat to a boiling point, then add, drop by drop, some of the suspected specimen. The presence of sugar is characterized by a yellow or a brick-dust precipitation. The mixture should not be boiled after the addition of the urine, as this induces the reduction of copper by other substances than sugar.

### ACETONE AND DIACETIC ACID

These are two pathological products found in urine, due to an acid intoxication and the breaking up of acetic acid, in cases of:

1. Starvation.
2. Febrile acetonuria.
3. Diabetic acetonuria.
4. Certain forms of cancer.
5. Mental diseases.
6. Derangements of digestion.
7. Chloroform narcosis.
8. Auto-intoxication.

*Indican* is found in cases of proteid decomposition in the intestines.

### ALBUMIN—ALBUMINURIA

The most common proteid in the urine in disease is serum albumin, although pathologic conditions of the kidneys, blood, etc., may give rise to other forms of proteid. By albuminuria we usually mean the presence of serum albumin in the urine.

A healthy kidney may excrete a certain amount of albumin, but not every urine contains albumin. It is generally admitted, however, that serum albumin and serum

globulin may occur in small quantities in the urine without any changes in the kidney.

Albuminuria may be due to one of three factors:

1. Changes in the kidney which affect the excretory epithelium.

2. Changes in the blood which render its serum albumin more diffusible.

3. Changes in blood pressure.

Serum albumin in noticeable amounts is never found in healthy urine and its presence is always an important clinical symptom.

TESTS

*Heat Test.* This depends on the fact that heat coagulates albumin as it does the white of egg. Heat a test tube two-thirds full of acid urine over a flame. If albumin is present a flocculent precipitate results. Next, add one-fifth volume of a saturated solution of sodium chloride and a few drops of 2 percent acetic acid, then heat. If the haze remains it is serum albumin, as nucleo-albumin and phosphates are soluble in the presence of sodium chloride.

*Nitric Acid Test.* This is the best and simplest. Take two parts of urine and one part of nitric acid. Slowly underlay the urine with the nitric acid. If albumin is present it will appear as a white zone at the junction of the acid and the urine. The width of the zone determines the amount of albumin present.

Slightest possible trace (S. P. T.) just visible against black background.

Very slight trace (V. S. T.) can be seen with background, but not looking down on surface.

Slight trace (S. T.). A distinct zone of white which can be seen without a background and from above.

Trace (T.). More distinct.

A brown ring often appears, due to the action of the nitric acid on the coloring pigments. A white zone is also formed by the action of nitric acid on the mixed urates, if these are in excess. This zone of acid urates is found over the zone of contact between the acid and the urine. It diffuses rapidly and can be dissipated on the cautious application of heat. Do not confuse this zone with albumin. It always lies above the junction of the urine and the nitric acid, and above the zone of coloring matter.

## To Nurses, at Graduation—Make Not Only a Living, but a Life

The methods and principles of a certain great manufactory have been much heralded throughout our country. It is the purpose of the establishment to promote and advance the worthy and efficient workers as far as such knowledge of them comes to the heads of departments.

Contrary to the usual procedure, a worker must be worthy as well as efficient. A visitor, being much impressed, inquired concerning this, was told that the firm believe that their men should not only make a living, but should make for themselves a *life* and that it was useless to encourage those who could not do so.

No reason was given the visitor for this, but it is at once apparent that the value of a life and its results are summed up in character; and character is largely made by the manner of doing ordinary tasks in addition to the reason for doing them.

The life you have chosen is one of service and the truest nobility is honest, earnest service, and the ideal of service is faithfulness or work done according to a high standard set up by the worker himself.

You know we have often discussed the fact that not all are endowed with equal ability; but you have it within your power to see that no one excels you in faithfulness and industry, which, after all, are the most splendid gifts.

The hospital days are in the past and you have given your service to it with a degree of faithfulness known best to yourselves. You know, also, whence came your greatest happiness—whether from the perfected task or in that which, mayhap, you partially evaded.

Whether you so reason it, you have learned that to accept your work as part of your duty and to cultivate it as a habit, is to safeguard your lives from many a mistake and error.

Ability to continue to toil is now what you must cultivate and you must find your compensation in an increased ability.

The work which has no other than a money value cannot bring the satisfaction the worker craves. If you put love for others into it, you take grossness out of it.

If you put love and efficiency into it and if you carry it on with patience and energy you prove yourselves worthy of promotion, worthy the honor of receiving harder and larger tasks, and you do give adequate response to your high calling.

## High Ideals in Nursing[1]

BY ALICE H. FLASH,
Superintendent of Nurses, Massachusetts Homeopathic Hospital.

This is not the place in which to indulge in familiar generalities about the ideal nurse—what she is or is not—but rather to discuss how we, real, practical people, in the most real and practical of callings, may employ the imperfect facilities at our command to bring out of the crucible of the training school a nurse who has ideals, even though she may not be one. When, with honor, dignity, and enthusiasm, we have trained her to use her hands, taught her to use her head, and inspired her to use her heart, we will have accomplished our purpose.

We have made a tremendous start on the road of standardized nursing education, but the goal is still far and, at present, the education and technical training of nurses must, to a great extent, be governed by existing local conditions. As ambitious and progressive nurses, we must stand for the highest and best, but, as superintendents, we must sometimes compromise with circumstances in the training of head and hand. But the training of hearts is strictly our own domain where we are hampered only by our own shortcomings. Here is the soul of the training school.

And so, if in this paper I speak little of the educational and technical equipment of the ideal nurse, it is not that I hold these things less high, but that experience has taught me that it is in the less standardized side of a nurse's training, which, for lack of a better term, we call the ethical side, that we seem most in need of counsel. We must learn to train the woman in the nurse. It is a significant commentary on existing methods that graduate nurses are rarely criticized for lack of skill, but almost always for lack of tact.

We cannot control all the elements that go into the character of an ideal nurse, but we may, if we face our responsibilities vigorously, influence them. We must first make it our business as individuals to attract to the training school educated women of good home traditions. It has seemed sometimes that, perhaps, some of us have put an exaggerated emphasis on this much discussed

[1]Paper read in the Conference of the American Hospital Association, San Francisco, June 25, 1915.

requisite of education—that a knowledge of the Latin conjugations is not a vital requirement for doing a surgical dressing. In all the discussions, we have, perhaps, lost sight a little of the fact that it is not merely what education *is* that we need, but what it *implies;* home training, parental ambitions, greater stability of purpose, more settled standards of conduct. To us, therefore, the high school diploma is more than a guarantee of a certain amount of book knowledge—it is a symbol, a symbol of the American home from which comes the woman we want for a nurse. It is an imperfect measure, of course, but, at present, it seems to be the only one practically available.

In drawing to our schools a desirable type of candidate, we should study the methods of an efficient salesman. He takes his goods to market and, if no market exists, creates one. We have not sought intelligently the sources of ideal supply for our schools, nor have we made any particular attempt to stimulate them. We have taken what has come along, have done the best we could with it, and have blamed our failures on the quality of the raw material.

The time now is ripe for vigorous action. Educated women everywhere are looking about them for an active means of self-expression such as is offered by our profession with its noble traditions and practical possibilities. We must seek out these women and make our profession known to them. We have agreed that the American colleges offer a practical and fertile source of material to the training schools, but our agreement has not functioned extensively in vigorous individual action. Discussions on how to train college women are less valuable to us at the present time than workable suggestions on how to get them.

In various states, notably in the west, superintendents of training schools have given so-called vocational addresses before the girls of the different state colleges. It is astonishing how little they knew about us, and more astonishing still, that in view of the direct results attained, more of us have not tried to apply the ideas and methods of these progressive women.

Miss Parsons, of the Massachusetts General Hospital, offers an illuminating experience and example. She has addressed the students of all the women's colleges of Massachusetts, setting forth the opportunities of the training as a preparation for life, and of nursing as a practical career for an ambitious woman. She has educated the colleges on the subject of the nursing profession. A majority of the nurses in her school today are college women, and Miss Parsons is not over-sanguine when she foresees the day when college training will be a requirement of entrance.

The enthusiasm and eagerness felt by a candidate when she is accepted are too precious not to be utilized. This is the time for the future nurse to imbibe our traditions and our ideals. She should be given a definite list of books to read; a life of Florence Nightingale, a life of Clara Barton, a history of nursing, a history of the Red Cross. She should be directed to review fractions and percentage and ordinary high school anatomy and physiology, but, under all circumstances, she should be required to provide herself with copies of the standard nursing periodicals, from which she will gain, more than from any other source, a sense of the bigness and broadness and the strong vitality of the profession as evidenced by its organizations and their varied fields of usefulness and aspiration.

It is impossible to over-emphasize the importance of early impressions on the probationers. They have such good intentions, these girls, vague, of course, and sentimental, and a little absurd sometimes, but, to us, as teachers of hearts, infinitely valuable. Ours is the task to preserve their enthusiasm through the trying probation period, to keep alight the flame of altruistic spirit, to glorify hard and disillusioning work.

Hard work, so-called menial work, is our first big difficulty. It is hard to make institutional housework the expression of high ideals. Quite properly there is coming to be less and less of this in the training, but—also properly—it still has its place in the routine. We make it clear to the probationer that she, as a nurse, will always be responsible for every detail of her patient's surroundings affecting his mental as well as physical comfort, and that such detail must be a part of hospital routine if she, as a graduate, would recognize and deal with it as part of duty.

By making the cleaning of a bathroom the first lesson in thoroughness, we instil the lesson that there is but one standard of work; neatness must be neatness, cleanliness must be cleanliness. Cleaning the bathroom may at first seem menial, but we show that it is really a test of character, of that sense of responsibility for homely detail that indicates capacity for critical emergency. A maid can put a ward in perfect order, we point out, but we expect a nurse to do more than that. She must leave behind her not only physical order, but spiritual calm. This is the measure of nursing efficiency, the difference between menial work and nursing.

You must not misunderstand me when I say that we do not believe very much in the formal teaching of ethics to probationers. Lectures on nursing ideals never made an ideal nurse. Ours is a profession of practice and its every act must be an expression of its ethical standard, its every duty an application of its ideals.

We must of necessity have a talk or two on hospital etiquette, but they should be human and reasonable, stating, not bare rules, but the simple underlying causes that make necessary certain principles of organization and management. Do not depict hospital discipline as a blind, relentless monster, but as a just and balanced system evolved from long experience and founded on the peculiar exigencies of hospital conditions.

Yours is the responsibility whether the young nurse regards the hospital authorities as enemies to be circumvented or as friendly co-workers for a common cause.

During the probation, a woman must prove herself to us as a woman, must prove her personal no less than her mental and technical fitness to uphold the honor of the hospital and of the profession. We have no rules in the nurses' hall. We have the traditions of all good American homes, and we expect in the nurses the standard of conduct of all well-bred women. The training school is not a school of deportment, and a woman who comes to the age of entrance without having acquired a sense of fitness in manners and in conduct has no place with us. It does not seem to me that the probationer who tucks her napkin in her collar will make the kind of nurse we want to send out into the world, nor does it seem to me that it is my function to instruct her in this matter.

We do not believe in a great deal of comment on conduct during probation. We believe that our standards should be made clear, our spirit demonstrated by example. But only by letting the probationer show in her own way what is in her of discrimination, taste, and common sense can we judge of her fundamental fitness for the nursing profession. But we hold toward her always an open mind, giving her every opportunity for observation and adapta-

tion, and, in the final judgment, we give her every credit for such powers of perception as she may have shown. As soon as we have permitted her to put on the cap of our hospital, the responsibility is ours and ours alone.

The student nurse, if we would join in her fair-mindedness and honor, must understand from the beginning that her relation with the hospital is a perfectly dignified, well-balanced business arrangement whereby she gives three years of service in return for technical training that lifts her forever from the ranks of unskilled labor. The contract is without obligation on either side except for its conscientious fulfilment. The responsibility for this rests on the superintendent of nurses, who must maintain always the balance between students with rights to be considered, and workers whose services may be commanded. On the maintenance of this balance rests the whole structure of our training schools.

There are many details of the hospital's obligation to the student nurses that admit of no argument; obligations that must be scrupulously discharged if the hospital would exact its own obligation of earnest inspirited service. We are all agreed that the nurses should have a definite curriculum, a high quality of instruction, living conditions that measure up to a high standard, but agreement as a body will do nothing without vigorous action as individuals. Our ideals must truly be expressed in works. If you have not a tabulated record of actual hours of theoretical and practical work to compare with the statements of your curriculum, if you are requiring your nurses to spend their off-duty time in attending classes, and requiring them to sit through badly prepared lectures either over or under their intelligence, if you are expecting a proper standard of conduct without providing a proper standard of living, you are failing in your duty, and failing in the courage, the firmness and the persistence that you are here to inspire. The self-administered assurance that existing conditions are the best you can do will not exonerate you.

As we give high ideals of justice in order to inspire them, so must we ourselves give enthusiastic and sympathetic service if we would receive it. When a nurse's work begins to lose tone, when her technic threatens to become perfunctory habit, and her interest in the day's work to become blunted by routine, do not think you can give her back her inspiration by lecturing her on professional ideals. A little personal pressure will accomplish more toward enlivening her spirit than all the high-sounding phrases you can muster. Go often to her ward, watch her at her work, drop in a word of praise here, a casual comment there—with *your* sympathy stimulate the failing springs of *her* sympathy.

Hospitals make exacting demands on the women in their service, but it is not fair to a student nurse to make her, during her training, an alien to all the interests of life outside the walls. Indeed, we must not do so if we would have our nurses well rounded women capable of meeting the myriad exigencies of their professional lives. The hospital life, the actual physical weariness at the end of the day's work, precludes our going out into the world to meet its interests. But there is no reason why we should not permit them to come in to us.

We touch here on the difficulty of the superintendent coming in contact with the nurses in her personal capacity. It is neither desirable nor possible for the superintendent to be "one of the girls" at night in the home, and still maintain the fine edge of dignity when on duty in the hospital. The usefulness of the head nurses in creating in the home an atmosphere to nurture and develop the woman in the nurse is handicapped by the same conditions. A house mother, a woman of lofty standards and elastic expressions capable of stimulating a simple and wholesome social and intellectual life seems the ideal solution. But, for the present, she is only for our large, well-endowed schools. The rest of us must exert ourselves in directing our available facilities to the best advantage.

In the home itself, in the group spirit of the nurses, we have an immense unused energy that invites careful study and direction. Perhaps I had better say here that neither experience nor experiment has justified any belief that the principles of student self-government could or should be applied to any angle of the training school that touches even remotely on the hospital and its requirements. But, in the idea is an ideal that is worthy of study and of adaptation to certain phases of the life in the home. Such suggestions as are here made are based on that ideal and are put forward only as general ideas to be formulated and developed according to specific requirements.

Class spirit has been little utilized by us except in maintaining the rule of seniority, but it may be made to serve not only as a proper means of self-expression to the student body, but as a means of relieving the superintendent of a considerable amount of detail. Each class should be represented on a house committee of three, the members chosen as may seem expedient. Through this committee the student body approaches the superintendent with its ideas and suggestions on all matters, not of discipline, but of social life. Through this committee the superintendent advances her own projects of a similar nature, giving latitude in detail and execution, both of which are entrusted to the house committee and its numerous self-appointed sub-committees.

Let this committee be responsible for the management of informal talks on current events given at regular intervals by local club women always willing to demonstrate their altruistic spirit. Turn over to it the care and energetic development of a periodical library including the best daily newspapers and the standard nursing journals.

Let this committee or its aides serve tea one afternoon a week in the nurses' sitting room, where they may drop in in their kimonos or in uniform as they come and go from duty.

Let each class give an annual tea to the other classes, this to be given in the parlors, and each member of the hostess class having the privilege of inviting a friend or two outside the hospital.

Let each class have an annual lecture during the winter, the subject chosen from a list submitted by the superintendent. A variety of timely and stimulating subjects on which volunteer lecturers may be secured suggest themselves:

Nursing in foreign missions;
Settlement house work in the large cities;
Infant welfare work;
The Red Cross.

The superintendent herself may give a tea in her rooms once a year to each class. Have an assistant, a graduate nurse, with interesting experiences to talk about. In every way, from your best gown to your warmest spirit of hospitality, give the little party the atmosphere of a private home and not of an institution. But remember that compulsory pleasures are a sad business, and every one of these things will fail of its purpose the moment it becomes even remotely obligatory. In the measure that anything of this kind is not yours, but the nurses' social expression, will it prove valuable to you as a means of softening routine and of instilling a knowledge and appreciation of social amenities.

At first thought, it would seem that in the troublesome matter of discipline in the training school there could be no ideals—only dire necessity. But there is discipline and discipline—a discipline of expediency that makes its object sullen and resentful, and a discipline of thoughtfulness that stimulates the latent or flagging sense of responsibility. Until we have cast out the former and achieved the latter, we have something to work for. Suspension, as the most available instrument in the hands of a superintendent, has, unfortunately, been used with more frequency than intelligence. Although the suspended nurse may recognize the justice of your judgment, she rarely, on her return, falls wholly back into the step and spirit of her work. Indefinite suspension has advantages over definite, for thereby the offending nurse may be put on her mettle to show by her attitude and her conduct that she is worthy to resume her responsibilities. But even indefinite suspension should only be used for extreme cases of deliberate neglect of patients; even then it is a poor expedient, and to find a practical substitute for it is something to be thought about.

For thoughtlessness or for single acts that might be accidents, it is hard to find a satisfactory measure. The ideal discipline in such cases is a punishment that fits the crime, that causes the nurse to make amends for what she has done. When a nurse's error has caused trouble to a patient, she may properly be required to special him on her own time, giving him all possible attention until every vestige of her mistake has cleared up.

Not long ago, on a busy day at the out-patient department, a nurse burned a woman's arm with carbolic. An instant's confusion of bottles and the damage was done. She was a good nurse, but this could not pass. For two weeks she was required to employ her daily hours off duty in visiting the patient, dressing her burn, caring for her and helping her. The nurse learned a lesson in human sympathy and self-denial, the patient had her faltering faith in trained nurses restored, and no one felt any resentment.

The most difficult cases we have to deal with are, after all, the inevitable breaches of decorum that occur in the best of homes, and which must be met if we would preserve their tone. But cannot many of these things be approached with a certain restraint and with a saving suspicion of humor? I have never forgotten the suppressed laughter that convulsed the training school when in my student days, a superintendent made a dramatic scene at prayers with a beer bottle she had found under the windows of the home. I always wondered why she didn't leave it there.

A superintendent will always find that hasty, unintelligent punishments visited on the grown women in her charge will react on her own influence. If she would make her own influence stand for justice, she must not permit tale-bearing, nor act on any suspicion that comes to her from any source whatever until she personally has investigated. No nurse should be condemned until she has been heard "in her own behalf." Then, since these are schools of nursing, and not of manners and morals, the judgment may properly be referred to the offender's parents or to those responsible for her deficient standard.

A nurse in a isolated ward admitted that she had chatted with an intern for an hour at midnight. She also admitted that she had not been brought up to entertain men in her home at that hour after her parents had retired. Then and there her father, a doctor in a nearby suburb, was notified of her breach of conduct and, at his request, she went home the next day on her hours. I do not know what happened at home, but I do know that that nurse has never since shown the faintest interest in interns.

The whole vexed question of the relation of doctors and nurses rests largely on the character and conduct of the superintendent. More in this than in any other phase of life in the training school is her example all-powerful. A superintendent and her staff who have for themselves anything less than the highest womanly standard of personal and professional dignity, prove themselves unworthy of the high trust of their positions.

Perhaps I have spoken more of ideas and methods than of ideals, but we all know that ideals without works do not last very long in the business of nursing. If we feel that ideals are one thing more to be added to a crowded curriculum, we will never attain them, but, if we make our ideals the vital spark of our nursing consciousness, they will become the guiding light for our every problem. Let us approach the problems of our training schools with ideals that express themselves in active, energetic efforts to better conditions. Only by so doing may we inspire in our nurses the enthusiasm, the honor and the resourcefulness that are their ideal equipment.

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### Rules for Giving Medicine

A few good rules to be remembered in giving medicine are:

Always give exactly what the doctor orders; neither more nor less. Always give medicine on time.

Medicines intended to be taken before meals should be given 20 minutes before meal time, those to be taken after eating, 20 minutes after the meal is finished.

Never give medicine without reading the label twice. When pouring medicine always hold label side up and avoid defacing.

Do not use spoons for measuring, for they are never accurate. Small graduated glasses, which are better, can be bought at any drug store for about 10 cents.

Always shake bottle before using.

Bottle should be recorked immediately, as some medicines become stronger and some weaker if left uncorked.

Medicines containing iron should be taken through a glass tube or straw, as they discolor the teeth.

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The "ministering angel" point of view is imaginary; there is no more self-sacrifice in a hospital than out of it. The nurses are not pale-faced, pious, and overworked, but a merry set of hard working women, who eat, sleep, and enjoy with zest any pleasure that comes in their way.

Miss Isla Stewart.

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The Chestnut Hill Hospital, Philadelphia, recently received $52,000 as a bequest from the late Chauncey S. Brush of that city. Out of the same estate $10,000 each was paid to St. Christopher's Hospital for Children, Germantown Dispensary and Hospital, Howard Hospital, Philadelphia Polyclinic Hospital, Pennsylvania Hospital for Sick and Injured, and the Hospital of the Protestant Episcopal Church of Philadelphia, and $12,000 to the Women's Southern Hospital.

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A national bureau of rural sanitation has been established at the U. S. Marine Hospital in St. Louis, with Dr. Allen W. Freeman, epidemiologist of the United States Public Health Service, in charge. From this station Dr. Freeman will direct educational work in rural sanitation over the entire United States. Twenty-five men will assist Dr. Freeman. They will visit the rural districts in every section of the country, speaking in town halls, school houses, and other places, and calling at the homes of farmers, telling the people how to care for their health and prevent disease. The states to be visited first are Minnesota, Iowa, Kansas and Missouri. This work was started at Washington last year on a small scale, but covered only a few of the eastern states.

# PREVENTION OF BLINDNESS

## MATERNITY

*Conducted by* CAROLYN CONANT VAN BLARCOM, R. N.,
*Secretary National Committee for the Prevention of Blindness;*
*Chairman Committee on Infant Welfare, National*
*Organization for Public Health Nursing.*

### Trachoma in the Mountains of Kentucky

BY DR. J. A. STUCKY, Lexington, Ky.

[Note—From no part of the country do we hear of more devoted, untiring and unselfish effort to save human beings from blindness than from the mountains of Kentucky. Whatever is attempted or accomplished there is in the face of almost unsurmountable obstacles, but the task is undertaken with a fearlessness and courage that are an inspiration to other workers whose efforts are facilitated by highly developed medical and relief agencies within their call. Even the railroads are lacking in many parts of Kentucky where patients must be reached and saved from blindness, and great stretches of nearly impassable mountain country are covered by those devoted sight-savers in wagons or on horseback. They literally carry their hospitals with them from place to place, improvising operating rooms and clinics from the meager equipment which they can carry, and work with untiring and unflagging spirit to preserve the daylight for many who would otherwise live in endless night.

The names of Miss Linda Neville and Dr. J. A. Stucky, who sends the following communication, are written in letters of light on the page of history describing the battle with trachoma in this country. The difficult trail blazed by them is now being followed by others in other states. The United States Public Health Service has recently secured an appropriation from the Government which will make possible the establishment of two trachoma hospitals in the southern mountains—one in Virginia and one in West Virginia. In the employ of each hospital will be a nurse devoted solely to follow-up work and the education of the people in their homes concerning the care of trachoma and methods of prevention.—Carolyn C. Van Blarcom.]

Fig. 1. Trachoma clinic held at Oneida, Ky.

Replying to your request to write a short article for publication in this department of THE MODERN HOSPITAL, on Trachoma in the Mountains of Eastern Kentucky, I have only to say that the most marked differences in the status of this disease as I have found it among the natives of the mountains are:

1. A large percentage of them have the disease, and the vision of many of them is permanently impaired by it.

2. This people (the natives) are genuine Americans, the last of the real Anglo-Saxons, who have been held back by the rapid advance of civilization because they have never had a square deal or a fair chance, having few and inferior schools, no roads and no community life. Their viaducts are aqueducts. It is almost unthinkable as well unbelievable that of this splendid people scarcely one in ten of the adults can read or write. The disease exists in its most serious form and in largest number among the adult population. The counties having most of the disease are pauper counties, with not so much as an almshouse where the afflicted can be cared for.

3. If the disease is to be eradicated and new cases prevented, among the chief factors in bringing about this result must be the influence and ministrations of the graduate trained nurse. In dealing with this splendid simple folk no man can do what woman can do, and the eradication of the disease will be the result of the combined efforts of the medical man, the trained nurse and the school teacher.

Fig. 2. Blind from trachoma for nineteen years. After six weeks' treatment in the hospital, which included double canthoplastic, double iridectomy, the patient has enough vision to attend to all of her domestic duties, including sewing and knitting.

No field for missionary service known to me offers as important and interesting a service for humanity, which can be accomplished more effectually by woman than by man, than this one among the natives in the heart of the mountains of Kentucky. Into the cabin homes on the mountain-side must be carried, by woman, to the mothers and homekeepers, the knowledge of how to live and be healthy and happy with what they have, where they are. In the mountains of eastern Kentucky is an ideal field for service for the educated, consecrated trained nurse who desires to live the larger professional life which she believes to be her vocation. It is with great pleasure and pride that I give to the good women, trained nurses—most of whom I have helped to train, and who have accompanied me for the past seven years in my semi-annual clinics—unstinted credit and appreciation for the work accomplished. Without the trained nurse not one-fourth of

the good that has been could have been accomplished. These women have not only rendered invaluable aid in scientific treatment of the disease among women and children, but have rendered a service in leading them from the bondage of illiteracy and ignorance regarding sanitary living in a way that no man could have done.

Unfortunately the specific cause of trachoma has not been found. This is a reproach to ophthalmology and it is to be regretted that a greater effort is not being made to isolate the specific germ producing the disease. The natives of the mountains know nothing of contagion and infection and very few or them know anything of the first principles of hygienic living. Undoubtedly the chief disseminator of the disease is the family towel, and when the natives are taught the necessity of doing away with this, as well as the necessity of clean living, sanitary cooking and correct eating, the disease will rapidly subside. I am convinced that trachoma is not actively infectious, and that only in the acute inflammatory stage where there is a copious discharge is it liable to be communicated. The graduate nurse should be taught how to care for the eyes and how to carry out the treatment prescribed by the oculist. I am convinced that half a dozen well trained nurses who will do district work in the mountains among the natives will accomplish more good in the eradication of this disease and in teaching the people how to live than twice this number of medical men. The average woman in the mountains, living remote from the railroad, is at least one or two centuries behind the times. She not only bears the heavier burdens of the race in childbirth, usually rearing a large family, but she does the major part of the work in the heat of the day on the hillside in raising the crop upon which this family is to subsist. It has been said that "far-away hills look green," and this is true perhaps in the majority of cases, but in the Appalachian range of mountains are avenues of work for the medical missionary never dreamed of by the average American.

Fig. 3. Wagon load of nurses homeward bound from a trachoma clinic in the mountains of Kentucky.

Fig. 4. Typical mountain cabin. All of the family have trachoma.

Be it said to the credit of the natives of the mountains that in addition to having a high grade of natural intellect, they are loyal, honest and highly religious—their religion being of the emotional type. What these genuine Anglo-Saxons and true Americans need is the example and help of true and trained womanhood, because it is by the women and children of the mountains that most of this infectious, destructive disease of the eye, and all other infectious diseases, is to be eradicated. Were the whole truth told of how these natives live and where they live it would sound like fiction; laurels and living monuments are waiting for those who believe that "charity begins at home" and that we *are* our brothers' and sisters' keepers. Here in the heart of civilization, within less than one hundred miles of Lexington, Kentucky, long known as the Athens of the West, exists a condition of affairs that should bring the blush of shame to the cheeks of those blessed with worldly goods and a knowledge of how to live. From the permanently impaired vision and the aching, trusting hearts of these genuine Americans, our neighbors and friends, comes the voiceless but soul-deep Macedonian cry, "Come over and help us."

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The Georgia Association of Graduate Nurses, in annual convention at Savannah, May 14, authorized the appointment of a committee to draft a bill designed to require compulsory registration of nurses and stricter requirements in admissions, and otherwise to raise the standard of the profession in Georgia.

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Fig. 5. En route to the clinic. The only roads are the creek beds.

Finally approved plans for the proposed new home of the Utica (N. Y.) Homeopathic Hospital call for two three-story buildings, one 41x109 and the other 42x68. The construction will be semi-fireproof. Brick and stucco are specified for the exterior. The partitions will be of brick and gypsum. Hard plaster will be used on the walls. The roofs will be of slag. The estimated cost of the two structures is $110,000. Agne, Rushmer & Jennison, of Utica, are the architects.

# DEPARTMENT OF LIFE EXTENSION

Conducted by EUGENE L. FISK, M. D.
*Director of Hygiene, Life Extension Institute, Inc.*
*25 West Forty-Fifth Street, New York City.*

### Keep Your Faith in Fresh Air

Scientific research and experiments are fast uprooting the very foundation on which we formerly based our theories regarding ventilation and fresh-air supply. We no longer value fresh air alone because of the oxygen or ozone that it conveys to the lungs. We hesitate to condemn foul air because of its carbon-dioxide or alleged organic impurities cast off by the lungs. Ozone in sufficient quantity to kill a microbe will prove absolutely harmful to an animal—it now receives little attention from hygienists. It may be stated that under no ordinary living conditions is the supply of oxygen so deficient, or the supply of carbon-dioxide sufficiently great to affect appreciably the condition of the blood. The real value of deep breathing seems not to be in bringing more oxygen to the lungs, but rather in its mechanical effect on the circulation. Air supply today constitutes a problem in physics rather more than in chemistry—a problem in which the skin plays a greater role than the lungs.

Kortkoff, a Russian investigator in this field, recently reported that rabbits kept in closed boxes for two months maintained fully as good blood conditions as those kept in the open air.

Men, surrounded by fresh air of normal humidity, have breathed vitiated air through tubes with apparent impunity—nevertheless, all such experiments only emphasize the enormous value of proper ventilation and the necessity of adequate utilization of fresh-air supply in our homes, work shops, offices and institutions. Results of the present intensive efforts to arrive at a solution of this problem do not shake our faith in fresh air—the last word is yet to be spoken—but our present knowledge justifies us in concluding that:

1. Baleful influences of so-called "foul air" are chiefly due to—
   - a. Presence of dust or deleterious chemical substances.
   - b Unvaried air temperature—unfavorable to good skin training.
   - c. Odors—oppressive and heavy, tending to mental depression.
   - d. Lack of air movement—unfavorable to normal evaporation and heat loss because it does not stimulate the circulation of the skin.
   - e. Excessive heat and dryness—deleterious to mucous membranes of nose and throat, even in rooms that are not crowded; and excessive heat and humidity in crowded rooms, preventing a normal evaporation and heat loss from the skin through radiation. (The ill effect of extreme dryness is still a matter of debate and has not been settled experimentally as have the other factors.)
2. Fresh air is most beneficial in its effects when—
   - a. Freed from dust or deleterious chemical substances.
   - b. Varied in temperature.
   - c. Without oppressive and heavy odors.
   - d. Moving over surface of body.
   - e. At temperature not above 70° F. and humidity of 60 percent.

The Life Extension Institute recently found an elevation of temperature constant in a group of people examined, accompanied in some cases by a slight skin rash. Investigation proved the group were working in rooms filled with stagnant, overheated air. A window-board, placed on the sill at an angle to deflect the air coming in from the slightly opened window upward toward the breathing zone, easily corrected the condition and the symptoms disappeared.

Special ventilating devices should be more extensively utilized to remove dust and deleterious chemical fumes in factories. Temperature should be varied at least twice a day by opening wide all windows. Electric fans are more essential in winter than in summer, when open windows are the rule, because most interiors, during the cold weather, are overheated and the air not only becomes too humid, but stagnant.

Remember that man today is not the outdoor animal of long-past ages with nerve centers constantly stimulated by the wealth of influence of earth, sea and sky. He now not only lives in houses, but is still further shut out from the atmosphere by clothing. Paper vests, chamois jackets and fur clothing should be resorted to only as a temporary protection under extreme conditions. Porous clothing will effectively protect you from drafts and colds if the skin is kept in training through cold water and air bathing. A normal skin and circulatory poise is a possibility to all save the feeble and anemic. Sleep out of doors if you can, but remember that there is no merit in cold feet or a frozen nose. Have no fear of the "night air"—all air at night is "night air"—but see that you oil or drain the breeding places of the mosquito, lest he soon fly in at your window.

### "The System" in Hospitals

We quote the following from a most excellent article on "The Trials and Triumphs of the Surgeon," by J. Chalmers Da Costa, M. D., LL. D., that appeared in a recent number of the *New York Medical Journal:*

"In some hospitals there is a certain evil tendency. Now it slumbers; now it turns uneasily in sleep, dreaming of power; now it wakes to harmful deeds. Now it fastens upon an institution as the Old Man of the Sea fastened upon the neck of Sinbad the Sailor. That evil tendency may be called 'the system.' All of you who have read of the murder of Rosenthal, the gambler, know what the system was in the New York police force. The system in a hospital is the same sort of thing to a less degree. It means that certain medical men improperly and unjustly acquire supreme power and use that power for selfish interests and not for the public welfare. In an institution in which the system is in full sway, some of the staff get more than they deserve and most less than they need. Those who speak the truth are regarded with fear and aversion. Abuses accumulate. Ignorant neglect is tolerated in some, the best effort is censured in others. There is an outward appearance of the highest efficiency, when in reality the institution is a whited sepulchre. No man is appointed to the staff purely for fitness, but personal reasons sway the result. On one side we see the suffering poor, on the other the foul and loathsome rule of the system. Everything is passed to the man higher up. If I had my way I'd strike that thrice accursed system dead."

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Miss Clare Baker, formerly head nurse at the Watertown (Ill.) State Hospital, is walking from Watertown to Seattle, Wash. Miss Baker expects to be accompanied part of the way by her sister, whose home is in Rock Island.

# SOCIAL HYGIENE
# VENEREAL DISEASES

Conducted by WILLIAM F. SNOW, M. D.,
*General Secretary, The American Social Hygiene Association,*
*105 West Fortieth Street, New York City.*

### What Shall We Read?

There is a constant and growing demand for short reading lists of books on social hygiene subjects from individuals and from organizations such as women's clubs, study circles, libraries, and the like. This demand is evidenced by the prize competition resulting from it, conducted by the American Social Hygiene Association and noticed in THE MODERN HOSPITAL for May, 1915. One of the difficulties in selecting such a list is found in the conflicting views of author and reader upon unsettled questions. For example, an author may write an excellent series of chapters on the changes of adolescence, presenting forcefully the need for continence prior to marriage, and follow these with chapters advocating sex relations within marriage only for procreation, or summarizing the arguments in favor of birth control and recommending their approval. The book is condemned by those readers who disagree with the author's views on sex relations within marriage. Some books have been opposed as unwisely stressing medical questions or the white slave traffic, others as minimizing the moral and religious factors, still others as being superficial or so poorly written in parts that the book as a whole must be disapproved.

With the purpose of stimulating the selection of effective methods of presenting facts and points of view rather than the selection of books in their entirety, a series of chapters from the thirteen books listed below has been chosen for illustration. The exact titles of the chapters have been quoted and the presentation of subject-matter under each title is as nearly a direct quotation as the combination of selected sentences permits. This list is presented for discussion as a beginners' course for groups of readers whose time is limited and who desire constructive information on social hygiene.

Exclusive of the reference books specified by the last three numbers, the chapters illustrated by these abstracts would make somewhat less than three hundred pages of the popular novel size. A novel, or an interesting book of science, history or travel, of three-hundred-page length does not deter even the busy man or woman from selecting it for reading. The cost of the thirteen books is less than fifteen dollars. This is more than one man or woman ordinarily desires to invest in reading matter on this subject, but for the shelves of a nurses' training school or hospital library, or a community reading-group this amount is not large.

The thirteen books considered, arranged alphabetically by author, are as follows:

What Men Live By.....Richard C. Cabot
Engagement and Marriage.....Orrin G. Cocks
The Social Disease and How to Fight It..Louise Creighton
Rational Sex Life for Men.....M. J. Exner
Prostitution in Europe.....Abraham Flexner
The Social Emergency.....William T. Foster
Biology of Sex.....T. W. Galloway
The Kallikak Family.....H. H. Goddard
For Girls and the Mothers of Girls.....Mary G. Hood
Heredity of Richard Roe.....David Starr Jordan
Teaching Sex Hygiene in the Public Schools.....Edith B. Lowry
Wild Oats.....James Oppenheim
Boyhood and Lawlessness, and The Neglected Girl.....Ruth True, Pauline Goldmark, and others

#### I. SAMPLE PARAGRAPHS FROM ELEVEN OF THE BOOKS

1. *The Social Emergency*, Foster; one chapter, 7 pages.

The breaking of the conspiracy of science concerning matters of sex and reproduction constitutes a social emergency fraught with immediate dangers which must be met, and the home, the church, and the school must be prepared to accept their full responsibilities in the teaching of sexual hygiene and morals.

2. *Various Phases of the Question*, Foster; one chapter, 12 pages.

The question is not merely one of physiology, or pathology, or disease, or wages, or industrial education, or recreation, or knowledge, or commercial organization, or legal regulation, or lust, or social customs, or cultivation of the will power, or religion. It is all of this and more. The danger is that we shall see only one or two sides of a many-sided problem.

3. *The Gate of Gifts, Inheritance of Humanity*, Jordan; two subtitles, 8 pages.

When a child is born, or long before that, at the moment of the blending of the two germ cells, the gate of gifts is closed to him. Henceforth he must expect nothing new and must devote himself to the development of the heritage he has received from his father and his mother. In this he has a lifelong task.

4. *Nature and Nurture*, Jordan; a group of subtitles, 14 pages.

One of the perennial questions in the study of man is that of the relative value of the original endowment as compared with the acquisitions of environment, training, and experience. Nurture has only Nature to build upon. With adequate nurture each man becomes what it is in him to become. The character of a nation is determined by the character of the people living in it. The purpose of the study of eugenics is to know the kind of ancestors we should pick for the next generation.

5. *The Call to Face Facts*, Creighton; one chapter, 6 pages.

The matters under consideration are of vital importance to the whole life of the nation. Therefore the way in which they are treated must also be of vital importance, and this especially in consideration of their peculiarly difficult character. The first need is for knowledge; but as everyone cannot know everything at once, selection is needed. Not only who shall know, but how much each should know is important.

6. *The Evil to Be Fought, the Only Real Cure for This Evil*, Creighton; two chapters, 21 pages.

It is, of course, impossible to fight these diseases as if they stood alone. They are part of a bigger evil, of the low moral tone in society generally, and the consequent prevalence of a different moral standard for men and women. It is this which has led to the existence of the chief means for spreading these diseases, the prostitute.

7. *Wild Oats*, Oppenheim; last three chapters, 30 pages.

A story with a message concerning the consequences of venereal diseases.

8. *The Kallikak Family,* Goddard; last chapter, 17 pages.

A scientific story with a message. A young man of good family, living in a New England colony prior to the Revolution, in an unguarded moment steps aside from the paths of rectitude and with the help of a feeble-minded girl, starts a line of mental defectives that is truly appalling. After this mistake, he returns to the traditions of his family, marries a woman of his own quality, and through her establishes a line of descendants equal to that of his ancestors. The record of the defective line shows forty-one matings in which both parents were feeble-minded and which have produced two hundred and twenty-two feeble-minded children.

9. *A Well-directed Childhood; the Girl, the Boy;* Lowry, three chapters, 33 pages.

Upon the training a child receives during the early years of his life, upon the ideals engendered, depends, to a large extent, the entire course of his after life. This does not mean that he is to be neglected in later years, but a boy or girl who has been rightly trained up to the age of twelve or fourteen very seldom will go far astray.

10. *Actual Conditions, Guiding Principles in Sex Instruction,* Galloway; two chapters, 20 pages.

The problem of sex, as it bears on human education, conduct, and welfare, is one of the most practical and important that we are called upon to solve. It must be understood at the very beginning that sex and all that it implies is a perfectly natural, normal fact of life, with nothing unholy or perverse about it.

11. *The Problems of Parents,* Galloway; appendix, 15 pages.

The purpose of this appendix is to deal somewhat concretely with certain of the more common problems which parents should help their children to meet. These questions, especially the early ones, will usually come out of a clear sky. It is the part of wisdom, therefore, for the parent to be prepared beforehand.

12. *The Significance of Sex, Physiology,* Exner; two chapters, 25 pages.

There can be no real satisfaction in sexual relations divorced from genuine marital love. I say marital love, for sex relations outside of wedlock involve responsibilities which no man or woman has the right to assume. Not only is the seeker after illegitimate sex pleasure denied that which he seeks, but he is visited with the most terrible retributions—the loss of the capacity for love.

13. *The Young Man's Problem,* Exner; one chapter, 28 pages.

From the beginning of puberty up into old age every normal man will from time to time experience sexual desire. This is natural; it is fundamentally necessary and therefore entirely honorable. It simply indicates that he is a man. The teaching of those who seem to assume that any manifestation of the sexual instinct or the experiencing of sexual desire is itself a sin or a cause for self-reproach and shame, is false and pernicious. The important question is, what should be the young man's attitude towards these natural impulses?

14. *To Mothers and Teachers of Girls, Concerning Marriage,* Hood; introduction and two chapters, 14 pages.

All boys and girls should eventually gain the appropriate knowledge under some sort of instruction. The parent cannot evade or shirk the responsibility. If the home has been negligent and failed to fulfil its trust, then, as in other matters of education, the interests of the community are involved and some other agency must provide suitable instruction for the rising generation of men and women.

15. *The Reproductive Organs, Menstruation,* Hood; two chapters, 10 pages.

The physical and mental changes belonging to the age of puberty are strongly marked. Before this time the girl may have been told by her mother that still another physical change is near. The meaning of menstruation should be explained to her and the reasons made plain why the girl should keep well and give proper attention to the hygiene of the menstrual period.

16. *Engagement and Marriage,* Cocks; fourteen questions, 48 pages.

Marriage is a most holy estate and is to be entered into "reverently, discreetly, advisedly, soberly, and in the fear of God." For this reason all the factors involved in successful marriage should be understood by the man and the woman.

17. *The Allies of Love. Love's House of Many Mansions,* Cabot; two chapters, 14 pages.

It seems hardly decent to discuss so sacred a matter in the publicity of print. Dimly aware of this, we try to approach the subject delicately through such phases as *The Spirit of Youth* (Jane Addams) or *The Life Force* (G. Bernard Shaw, in *Man and Superman*). To free the word "love" from its association with boudoirs and morbid novels, we try to identify it with something genial and all-pervasive, to ally it with the great, sane forces of nature. We must learn to think of personal love not so much as a single quality or impulse, but as a house of many rooms. Each room represents some type of affection—conjugal, paternal, filial, or friendly.

### II. THREE STUDIES WORTH STUDYING; COMBINED IN TWO VOLUMES

18. *Boyhood and Lawlessness,* 199 pages.

The influence of environment on character is now so fully recognized that no study of juvenile offenders would be complete without a consideration of their background. The pages descriptive of this study of boyhood and lawlessness in a section of New York City are replete with specific information and suggestions which are in a large measure applicable to boyhood and lawlessness throughout the nation.

19. *The Neglected Girl,* True; 134 pages.

"You've got t' keep your eye on a girl. Now, it's different with a boy. He can take care of himself. But you never can tell, if you don't keep a watch, when a girl's goin' to come back an' bring disgrace on you." Such in a nutshell is the attitude of our community toward the adolescent girl. Like its companion study, this one presents facts and observations of great value to all students of social and moral conditions of our people.

20. *Prostitution: Definition and Extent, Regulation and Disease, Abolition and Disease,* Flexner; complete book, 452 pages.

It is difficult to summarize the contents of the volume. It touches many different aspects of the problem—the nature of modern prostitution, the factors determining demand, the sources of supply, the various methods used in its regulation or control, their operation and value, the effect of abolishing regulation, and the general outcome of European experience. Though Dr. Flexner has in no way taken America into consideration, without question the facts he has assembled will be highly pertinent to any discussion in this country as to the merits of proposed legislation; for his account makes it clear that widespread misapprehension prevails as to the policies pursued by European cities, and their results.

# PHILANTHROPY AND THE PUBLIC HEALTH

THE NEW YORK ASSOCIATION FOR IMPROVING THE CONDITION OF THE POOR.
BAILEY B. BURRITT, General Director.
WILLIAM H. MATTHEWS, Director.
*Department of Family Welfare.*
DONALD B. ARMSTRONG, M. D., Director.
*Department of Social Welfare.*

## Preventive Nursing—An Educational Bureau

BY HOLLAND HUDSON.

What preventive medicine is to surgery and medicotherapy, preventive nursing is to hospital nursing practice. It is the stitch in time that may save nine cases in ten from already crowded hospitals and almshouses. Preventive medicine is well personified in the medical examiner, a registered physician peculiarly skilled in the detection of those minor physical defects which are the gateways of disease. Preventive nursing is similarly personified in the social service nurse, a hospital-trained specialist peculiarly skilled in bringing to the medical examiner from the many persons in her care those who need his services, and in seeing his advice carried out until her services are superfluous.

Preventive nursing is the common ground of modern medicine and modern philanthropy. Few modern hospitals (except those treating a special class of patients), recognizing how many patients are diseased because they are impoverished, are now without a social service department. Few modern philanthropic organizations, recognizing that more than half of their applicants are dependent because of sickness, are without a large and growing staff of nurses.

It is the task of the Bureau of Educational Nursing of the New York Association for Improving the Condition of the Poor to pilot back to health one-half of the families whose destitution also receives material relief. In addition to this, hundreds of families who need only a nurse's services to prevent destitution are cared for by the bureau. Altogether, it is a task which few hospital superintendents would envy, but it is pursued both by the bureau superintendent, Miss Le Lacheur, and the entire staff of nurses with a clear-headed enthusiasm and thoroughness which makes the bureau a more potent social agent with each month of its experience.

A specific illustration of the bureau's work is contained in the following characteristic day from a nurse's work:

Arrived on district, ready for first call, at 8:45 A. M.

*First Call.* Instructions to pregnant woman; referred her to Bellevue School of Midwifery. Examined the children who were at home.

*Second Call.* Family returned from Caroline Rest[1] one week ago; referred baby to milk station and arranged to have two younger children examined for tonsils and adenoids.

*Third Call.* New case; woman pregnant and not well. Referred her to New York Dispensary for medical attention. Boy of seven anemic; child of three years very bad case of rickets; child of five badly burned—cared for by Henry street nurse. Mother willing to follow any instructions.

*Fourth Call.* Found baby of six months quite ill. She was afraid to take baby out. Made baby comfortable.

*Fifth Call.* Asked doctor from New York Dispensary to call—ordered milk. Later, baby found to have pneumonia.

*Sixth Call.* Took four children to New York Dispensary Tuberculosis clinic for examination and got report. Mother was not able to take them.

In office at 11 A. M. for dictation of previous day's work, reading new cases and day's mail, dictation of letters, consultation with visitors and supervisor. Referred baby in third call and two other children to Convalescent Home. Telephoned Bellevue School Service regarding family in which both are mutually interested. Telephoned Babies' Welfare Association and arranged for admission of rachitic child (third call) to Laura Franklin Hospital. Answered several telephone calls and interviewed woman in application room. Ordered milk for baby referred to Milk Station. Read over cases dictated on day before.

Left office at 12:30 for luncheon. On district, 1:15 P. M. Took baby to Laura Franklin Hospital (mother was a janitress, unable to leave). Met two women at office and took them to School of Midwifery for examination. Went to Bellevue Dispensary; met nine patients—three for children's clinic, one for gynecological clinic and five for medical clinic. Spoke to doctors about them and got reports. Looked up information about three old cases and visited two patients in the wards. Arranged with Social Service Department to send one of the latter to the country.

Returned to office; made out list of cases for next day.

This shows thorough cooperation with five medical and two relief agencies. It is characteristic of preventive nursing by any organization.

In two particulars the Bureau of Educational Nursing is attempting to reach the ultimate standard of preventive nurses. First, it recognizes that every hospital graduate is not naturally equipped for such work. Just as the work of the medical examiner calls for more than a technical proficiency in the use of speculum and stethoscope, the preventive nurse's work calls for more than a glib familiarity with hospital routine. She must have the medical examiner's sharp eye for physical and mental defects; she must possess infinite tact and tireless pertinacity; she must be capable of prompt and shrewd decisions and able to persuade, or even command, as well as to obey.

On such a personnel the bureau depends for its field efficiency on dynamic and not static minds. The administration is similarly dynamic. The type of record used by any nursing staff of ten years ago would not be tolerated today. Year by year and month by month, the bureau has adopted from the modern hospital and the modern business administration new means of efficient record, rejecting the cumbersome and retaining what experience proves valuable. Without sacrificing field efficiency to statistical proficiency, the bureau has found that a complete system of records is both a barometer and an accelerator of that much-desired efficiency. Today the bureau can give by the telephone, without delay, any essential fact in any case history requested by some other agency of medical or material relief. There is no mystery about how any nurse's time is spent, or why any case was terminated. Such information is immediately accessible in simple and concise form.

[1] A postnatal convalescent home and school for mothers maintained in Westchester county by the N. Y. A. I. C. P.

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A gift of eight and a half acres of ground and several buildings near Llanerch, Pa., has been made to the Babies' Hospital of Philadelphia by a friend whose identity has not been disclosed. The property is being altered to care for the hundreds of babies of the poor up to three years old, suffering from summer complaint and other acute diseases.

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Dr. Jos. T. Buxton, of Newport News, Va., has awarded a contract for the erection of a private hospital to cost $15,000.

# DISPENSARY AND OUT-PATIENT WORK

Conducted by MICHAEL M. DAVIS, Jr.,
*Director of the Boston Dispensary.*

### A New Field for Out-patient Work

A new field for out-patient work is developing in connection with mental diseases, as shown by the following extract from *The Survey* of May 15, 1915. The development of this special out-patient service connected with the hospitals for the insane, and in psychopathic hospitals for the study and disposition of cases of mental disease and defect, will undoubtedly lead also to the extension of special clinics for mental diseases in the out-patient departments of the large general hospitals.

With the rapid development of out-patient activity in the Massachusetts Hospital for the Insane, a new era seems at hand. For many years a complaint has been heard that the doctor saw the mental case too late to do any good. In spite of new legislation and attempts to maintain high hospital standards at our institutions, the fact has remained that most of our patients have been sent to state hospitals as a last resort and so have received expert advice after their disease had advanced to such a point that forceful confinement was necessary.

Though the average hospital physician has recognized that state care really meant more than the custody of incurables, the average layman has been inclined to overlook the fact that prevention and treatment were the first interests of such physicians. On January 1, 1913, an out-patient department was opened at the Psychopathic Hospital in Boston. Complete in every detail, with elaborate provision for social service work, this department serves as a model for out-patient organization.

At last the social service idea had reached the insane hospital. Not content with having Boston alone provided with such an opportunity for early diagnosis and after-care, the Massachusetts Board of Insanity asked in August, 1914, that each hospital under its supervision consider opening an out-patient department. This request met with a ready response, and one by one the hospitals have announced new clinics, until now, only a few months since, nearly every hospital has undertaken some form of out-patient work and ten have opened clinics in more than twenty different cities and towns.

A year ago advice could be had at great expense only by few except those in Boston. A patient had to be committed as insane to get proper treatment, except the few who could be persuaded to go to hospitals as voluntary patients. When discharged from a hospital no more was known of the patient until a relapse brought him back to the hospital again. The hospital doctor, even though his motives were of the best and his action the most altruistic, was looked upon as one a little apart from the rest of the medical profession and perhaps akin to the jailer.

Now all this is to be changed. Nearly every large city in the state has a clinic. Some are monthly, some weekly, and one is daily. Every effort is made to make them reach patients early, such as notifying practicing physicians of the date of each clinic and putting a short notice in local papers. Especially are former hospital patients urged to report from time to time that a relapse may be forestalled.

Social service is being added, and relations between doctor and patient are becoming more intimate and less official. Also the doctor of the insane hospital is taking his rightful place among practitioners—that is, he is being looked up to as a specialist, rather than down upon as a custodian.

Another wholesome feature is the cooperation between different hospitals in this work, a thing of which there has been altogether too little in the past. Each hospital is becoming the center for conserving the mental health of its neighborhood rather than a gloomy place where "crazy" people were confined, a place always looked at with mystery and suspicion.

These clinics are being well received; patients are using them in increasing numbers and doctors are not only sending patients for consultation but are going themselves to consult about patients under their care and to inquire for those whom they have sent to the hospital.

Thus it seems that a breach is being closed. The barrier between patients needing advice and the doctors anxious to give it is being broken down, and the insane are being considered as sick friends, not as outcasts.

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### Fact and Fiction About "Dispensary Abuse"

There is still a great deal of talk about "dispensary abuse." A superintendent writes: "Doctors oppose a dispensary because they say they lose patients; the dispensary takes patients though they can pay; they flock to a dispensary and cheat the profession."

The physician of one prominent organization located in Philadelphia took a group of 200 patients to study carefully. On first examination it was judged that 7 percent were questionable cases, and 93 percent were undoubtedly unable to pay for the physician. When, however, on further investigation by skilled workers, the 7 percent were more carefully studied, it was found that more than one-half of them were suitable cases and were not abusing the privileges of the dispensary. They were, for the time being at least, unable to pay a physician. It has been charged by some that dispensary abuse is particularly rife in Philadelphia. The above report from the medical clinic of the Dispensary of the University of Pennsylvania may, therefore, be of especial interest to some members of the profession in Philadelphia.

A report recently received from the Dispensary of Rhode Island Hospital showed that in the course of a year a trained social worker had taken charge of the admission desk and had questioned all applicants for treatment. The proportion of cases who were deemed able to pay for a physician was 3½ percent.

If two ounces of fact are not worth several bushels of statement, the above dose of facts at least suggests that every institution might well make similar studies. The investigations made by a committee on out-patient work of the American Hospital Association, reported in the proceedings of the association for 1913, and a study made in 1911 by the County Medical Society of New York City, all tend in the same direction as above.

It is easy to get excited over scattered cases of imposture. Is it not better first to find out whether such cases are large or small proportion before admitting that any rise of temperature is justified?

# LETTERS FROM OUR FIELD EDITORS

## News From the Pennsylvania Field

### STANDARD LAYETTES FOR INFANTS

The Child Federation of Philadelphia has carefully selected as to quality, type of garment, and price, three grades of layettes, which will be known as No. 1, sold at $5; No. 2, sold at $6.50; No. 3, sold at $20. These outfits are designed by physicians and nurses connected with the Child Federation and will be for sale in all the department stores of the city. Incidentally, the mothers will be saved from foolish expenditure of money for extravagant and improper garments for the babies.

### BEQUESTS

The late Josephine Borie bequeathed $2,000 each to the Free Home for Consumptives and St. Vincent's Home. Among other public charitable bequests was that of M. J. Power, who bequeathed $5,000 to St. Joseph's Hospital, $1,000 to St. Vincent's Maternity Hospital, and $500 each to St. Mary's and St. Agnes's Hospitals. The American Oncologic Hospital received a bequest of $5,000 from the late Ada R. Kimball.

The trustees of the estate of the late Chauncey H. Brush, in compliance with the instructions of the testator, divided his estate among the following institutions: Chestnut Hill Hospital, $52,000; St. Christopher's Hospital for Children, $10,000; Germantown Hospital, $10,000; Polyclinic Hospital of Philadelphia, $10,000; College for Graduates in Medicine, $10,000; Pennsylvania Hospital, $10,000; Episcopal Hospital, $10,000; Women's Southern Hospital of Philadelphia, $12,000.

The will of the late Emma N. Paul included among other contingent bequests $5,000 to the Hahnemann Hospital and $2,000 for the Home of Crippled Children.

### OPTOMETRY BILL

In a statesmanlike message Governor Brumbaugh, of Pennsylvania, vetoed the optometry bill, which was designed to regulate the practice of optometrists in Pennsylvania by creating a new examining board to license optometrists. In the words of the Governor, "There is no convincing reason why these practitioners should not voluntarily place themselves under the existing licensing body of the Commonwealth. Unless a commanding reason is manifest, no additional examining boards for professional regulation should be created. The standards of professional service in this Commonwealth are and have been high. We are a center of professional services of the most commendable standards."

### ANTI-VACCINATION ACT

The proposed bill, made to curtail the activities of health officers with respect to vaccination, was overwhelmingly defeated by the Pennsylvania legislature.

### WIDE-OPEN HOSPITAL BILL

A bill providing that any and all medical practitioners shall have absolutely equal access for their patients to ward as well as other bed facilities in hospitals receiving state aid has not yet been acted on. The same holds true as to compensating physicians for vital statistics reports.

### NURSES CONTRACT TYPHOID FEVER

As a result of an epidemic of typhoid fever in the Homeopathic Children's Hospital, two nurses died and two other young women contracted the disease. The health authorities are striving to trace the epidemic.

### THE BABIES' HOSPITAL OF PHILADELPHIA

This hospital, which has occupied the Country Branch property of the Children's Hospital of Philadelphia for the last three years, declined an offer of the Children's Hospital to manage the Babies' Hospital and the latter has opened its own plant near Llanerch, Delaware county. The building is an old country mansion and is being altered so that it can be used for the care of the babies taken from the congested districts of the city during the summer.

### STATE APPROPRIATIONS TO PRIVATE HOSPITALS

Bills carrying appropriations for the following hospitals of Philadelphia are on their way through the legislature at the present time: Stomach Diseases, $10,000; Jewish, $50,000; St. Luke's, $35,000; Gynecean, $30,000; St. Joseph's, $68,000; Oncologic, $25,000; Kensington, $25,000; Orthopedic, $42,500; West Philadelphia for Women, $14,000; Women's Medical College, $45,000; Germantown, $15,000; Woman's, $57,000; Children's Homeopathic, $55,000; Jefferson Medical College, $200,000; Rush, $34,000; St. Mary's, $42,000; West Philadelphia Homeopathic, $17,000; Stetson, $6,000; Douglas, $25,000; Polyclinic, $70,000; Lying-in Charity, $22,000; Mercy, $11,000; Women's Southern Homeopathic, $17,000; Howard, $24,000; Maternity, $7,000; Providence, Germantown, $10,000; Garrettson, $26,000; Samaritan, $85,000; Mount Sinai, $75,000; Frankford, $55,000; Roosevelt, $14,000; Osteopathic, $5,000; Jewish Sanatorium, $24,000; Northwestern, $20,000; St. Timothy's, $35,000; Medico-Chirurgical, $158,000.

### UNIVERSITY OF PENNSYLVANIA PHYSICIANS FOR PARIS

For some time past the University Hospital, under the direction of Dr. J. William White, has been arranging for the expedition of physicians to man the Paris hospitals during the months of July, August and September. The following physicians have been named to accompany Dr. White: surgeon, Dr. James P. Hutchinson; neurologist, Dr. Daniel J. McCarthy; assistant surgeons, Doctors E. B. Piper, W. E. Lee, A. E. Billings, P. M. Keating; bacteriologist, Dr. Samuel Goldschmidt; nurses, Mrs. M. E. Spry, Miss Jackson, Miss Wagner, and Miss Frazer, all of the University Hospital.

### PHYSICIAN ARRESTED UNDER DRUG ACT

The first arrest for violation of the Harrison anti-narcotic law was made yesterday when Dr. Michael Susman was taken into custody by an internal revenue officer and held under $1,000 bail for further hearing by the United States Commissioner. The doctor is charged with having committed perjury in falsely swearing to the quantity of habit-forming drugs he had received and dispensed.

### LAWN FETE

As a result of a lawn fete held under the direction of the social service department of the Bryn Mawr Hospital, that institution has been enriched to the extent of $8,600, and assisted by main line churches and civic associations, that institution has been enriched to the extent of $8,600.

WM. H. WALSH, M. D.

# LETTERS TO THE EDITOR

## What Are Dietitians For?

To the Editor of THE MODERN HOSPITAL:

Even though only a small voice among thousands, I want to be heard in saying that as a dietitian I have derived much benefit and, oh, so much pleasure from the various articles on diet which have appeared in your magazine.

Miss Graves' papers have certainly been exceptionally good; and Miss Eckman's—well, it was after my own heart; but how many years must we wait before doctors as a whole will recognize us as being of much real value to them? Down here, I am afraid the years will lengthen out into hundreds.

This is a very well equipped and well managed hospital of 90 beds. I have been here eight months—and never yet have been consulted or even asked concerning a diet by a doctor. Whose fault is it, theirs or mine? They compliment me upon pleasing the patients, but that is not adequate return—at least that is not the work one cares for who has equipped herself, at least in a small measure, to do scientific feeding. I am a graduate of the University of Illinois. Southern hospitals demand well trained women and pay high salaries—but give them, comparatively speaking, nothing to do. I certainly trust that we shall be able to read many more articles relating to diet in your splendid magazine.

Sincerely,

MISS E. HUBBARD,
Southern Highlands Infirmary, Birmingham, Ala.

## One Reason for Overcrowding Free Clinics

To the Editor of THE MODERN HOSPITAL:

When medical practice comes into daily contact with the living problems of the poor one is constantly made to understand that there are many of our inherited opinions which have little to recommend them except the accepted sanctity of tradition. Ethics can be no more than an expression of courtesy and honest treatment of our fellows—yet we act as though in these were embodied something applicable only to the conduct of a superior cult. For instance, the man who is most solicitous as to the price is by all odds the man most likely to pay his bills, and he who lightly or unquestioningly incurs expense is a spendthrift or a deadbeat. He disregards the cost because he does not intend to meet the obligation. In every business transaction we commend the thrift of the man who carefully considers before he decides to become a debtor. Yet when that same man asks a physician "What will you charge?" he is supposed, in some inexplicable way to have offended the sacred traditions of the Medical Profession. He is "shopping"—he is "commercializing" a sacred art, and instead of in a perfectly self-respecting way giving a straight answer to the question, the physician, especially if he is a man of limited practice, feels that only by assuming an air of injured dignity can he bolster up his offended professionalism.

There is no good reason why a man may not at once give his price for so minor an operation as the removal of tonsils or adenoids, or of any other work not subject to troublesome complications, yet there is no one thing that more certainly leads to the very bargain hunting we deplore than this unwillingness to set an exact money value upon a proposed operation.

The time has passed when the man who works with his hands rates the superiority of the skill of the doctor above that of the master mechanic or successful business man. Subserviency to the so-called "learned profession" lost its hold when serfdom went out of date, and our reputations will rest on what we do and not on what we charge.

But the thing I mentioned is not a part of a general lofty disregard of money matters, for the same man who resents the "shopping" or bargain hunting is the one who sends to the public clinics many who would otherwise become his loyal patients. A refusal to set, in the beginning, a fixed price for his services is continually coupled with generalization as to prices which is simply appalling to those who listen. A medical man recently told me he would not touch an adenoid case for less than $75.00. I did not believe him—unfortunately the patient did.

A father near the school—six children—father getting $2.00 a day—was told by a perfectly respectable doctor that four of his brood must have their tonsils and adenoids removed. The man consulted with four different physicians, members of our medical society, and received as the least charge for the four—$50.00 a child. I know that the father was very desirous not to accept charity, but driven by the circumstances of the case, he asked admittance to the free clinic of Mercy Hospital. The case is exceptional only in the number of children.

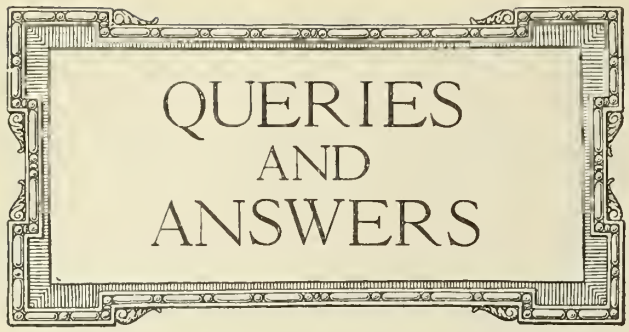
Mercy Hospital is always overcrowded. Its physicians give free services to its large demands, and it seems most unfair to them and to the institution that Mercy should be forced to receive patients who but for an adherence to outgrown ideas would be under the care of their own family physicians. The very large proportion of sober working men prefer to pay for services rendered, and they would do so gladly and self-respectingly if only the price set were measured by their circumstances, and if at first they knew exactly what that price were to be. Going from physician to physician is not "shopping" in any reprehensible sense. It is simply an honest effort to make small incomes cover large demands, and until specialists recognize and sympathize with such conditions hospitals like the Mercy will be forced into giving free services where such help should not be necessary.

KATHERINE B. RICHARDSON, M. D.,
Mercy Hospital, Kansas City, Mo.

## HOSPITAL GETS $2,000,000 ESTATE

### Barnard Skin and Cancer Institution of St. Louis Inherits Fortune of Founder

The will of the late George D. Barnard, of St. Louis, president of the firm of George D. Barnard & Co., blank book and stationery manufacturers, disposes of the bulk of an estate of $2,000,000 to charitable purposes. The chief beneficiary is the Barnard Free Skin and Cancer Hospital, of St. Louis, which was founded by Mr. Barnard ten years ago. The hospital is to receive the income from the residue of the estate after minor bequests to relatives, employees and other charities have been fulfilled. The provision for the hospital is contingent upon the name remaining unchanged, and not more than $5,000 a year can be used in research work. The Memorial Home and the Home for the Friendless, both of St. Louis, are to receive $2,000 each annually, and the St. Louis Provident Association $1,000 annually. To the Home for Aged People, in New Bedford, Mass., where Mr. Barnard lived as a boy, $3,600 annually is bequeathed. Two hundred and fifty dollars a year is to be expended in buying tickets to concerts of the St. Louis Symphony Society for pupils at the Missouri School for the Blind.




### Inclines in the Hospital

To the Editor of THE MODERN HOSPITAL:

We are going to build a two-story and basement wing for surgical cases. The other part of the hospital is four stories high and basement, and we use an elevator. Our architect wants to do without an elevator in the new wing and use an incline instead. Will this prove satisfactory? The wing is too far from the main hospital, and the arrangement is not right, to allow us to run a bridge over between the second story of the wing and the second story of the main building. Will the incline be satisfactory, and will it take the place of elevator and stairs?

A SOUTHERN HOSPITAL.

A good many hospitals are substituting inclines, or "ramps," as they are called, for stairs and elevators in two and three-story buildings. Doctor Corwin, Chief Surgeon of the Colorado Fuel and Iron Co., used ramps in the Minnequa Hospital in Pueblo. The inclines seem to be working well there. Many other hospitals are using them and there seems to be no complaint. Care should be taken to see that they are not too steep in order that a nurse may be able to wheel a patient in a wheel-chair or even a surgical case on the stretcher without too great an effort. An orderly is not always available. The incline, or ramp, has become quite standard in hospital architecture. It will not do for buildings of more than two stories and basement, where time and the conservation of energy are factors to be considered. A three-story building ought to have an elevator.

### Home Sterilized Catgut

To the Editor of THE MODERN HOSPITAL:

We have sterilized our catgut for the operating rooms in the hospital for a number of years and we have never had an infection traceable to catgut. Our doctors are now insisting that we buy our catgut already sterilized. Is this necessary and what can we do to satisfy the doctors?

A SUPERINTENDENT.

It is very doubtful whether your statement that you have not had infections is true; you probably think it is true; you must have had infections, else why would your surgeons insist on changing a practice that has proved to be satisfactory? Your doctors know better than you do whether you have had infections, and they are in position to determine better than you can determine whether your infections were probably due to catgut. You had better give them what they want and buy your catgut already sterilized. There are three or four firms whose chief stock in trade is their reputation and they certainly know more about catgut and its preparation than hospital people do, and they have always experts at their plants performing the work, whereas you entrust your work many times to young, inexperienced nurses, who rotate from one service to the other in the institution. There are too many chances for accident, and accidents due to infected catgut are too costly. Volumes have been written about the sterilization of catgut, and there are many technical points about it that have never been written at all. You had better do what your doctors want and avoid the responsibility.

### Bedside Tables

To the Editor of THE MODERN HOSPITAL:

The bedside tables in our hospital wards always look untidy, no matter how much work we do to keep them in order; they are very plain, white enameled, open all around, and have one shelf and a porcelain top. We want to keep some of the individual belongings of patients on the shelf of this table, such as brush and comb, tooth brush, shaving mug, towels, etc. What can we do about it, if anything?

A WELL-WISHER.

If you have a good tinsmith in your neighborhood he can fix the tables for you to make them an exact duplication of the latest model of ward tables, and you will be pleased with the results. Have him cut sheets of ordinary tin that tinners use, of a size in length that will fold around three sides of the table, and lap around the posts; in width of a size that will run from a point about one-half inch below the table top to about an inch or two below the shelf. He will bend these sheets so that they will fit snugly around three sides and grip the two posts at which they end; that will leave one side of the table entirely open. These sheets can be white enameled and made to look exactly like the rest of the table. The half-inch opening at the top is for ventilation. Your tinner can put in an extra shelf for you if you need one; made out of a heavier sheet metal. By keeping the open side of the table toward the wall, the untidiness of the shelf and its contents will not be seen. It is quite easy to give the table a half turn when you want to get at the contents.

### Humidity in Hospital Air

To the Editor of THE MODERN HOSPITAL:

Is there any fixed amount of humidity named as desirable in the air of hospital rooms and wards? Our doctors and some of the better class of patients sometimes find fault with the air in the hospital, and talk learnedly about "relative humidity," but no one has ever suggested just what we should have or how we are to get it. Please help us if you can.

AN EAGER ONE FOR KNOWLEDGE.

This seems to be almost wholly a matter of personal comfort and the personal equation. Well people differ in their preference as to moist and dry atmosphere, and individuals differ at different times and under differing conditions. Sick people are more exacting in all their requirements because of a lowered vitality of the impairment of certain of their functional organs. For this reason no one quality of air would be best in all parts of the hospital.

Take the heart case, for instance. You will find one of these patients sometimes fighting for air and very much distressed; lower the temperature and let in a lot of vapor from the radiator valve, and immediately this patient will become comfortable, the flush will pass away from his face and he will sleep quietly. But if there is a tuberculosis, last stage, patient in this same room, who has very little lung space left for breathing purposes, you will find that as the heart patient gets better, this other will become correspondingly distressed; he needs dry air.

The fact is we know nothing whatever about air problems aside from physical results. If we sleep in a room with the windows closed we get a headache and are miserable next morning; so we sleep with them open. But there are a lot of people who seem to get along quite as well and live just as long or longer who sleep with their windows tight closed.

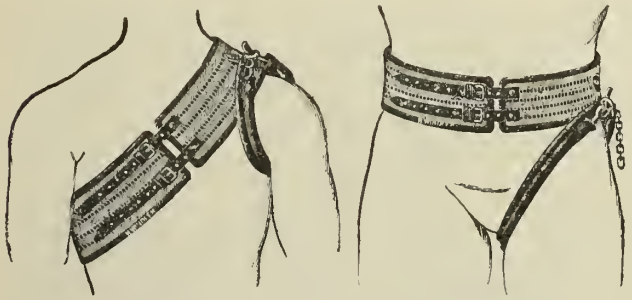
It has been pretty well demonstrated that school children have a higher efficiency in their studies, concentrate better on their work and are sustained at a higher plane of vitality at the close of the working hours if the school room is kept fairly low in temperature, say 65 degrees, with a relative humidity of about 60 percent. But the reasons advanced leave a good deal to be desired.

# NEW INSTRUMENTS AND APPLIANCES

VINCENZ MUELLER, Technical Editor.
GEO. W. WALLERICH, Associate Editor.

### New Devices Suitable for Hospital Practice

Since the beginning of the European war one finds rather few new inventions of surgical instruments or apparatus described in the foreign medical journals and in the surgical trade publications. Most of the new devices



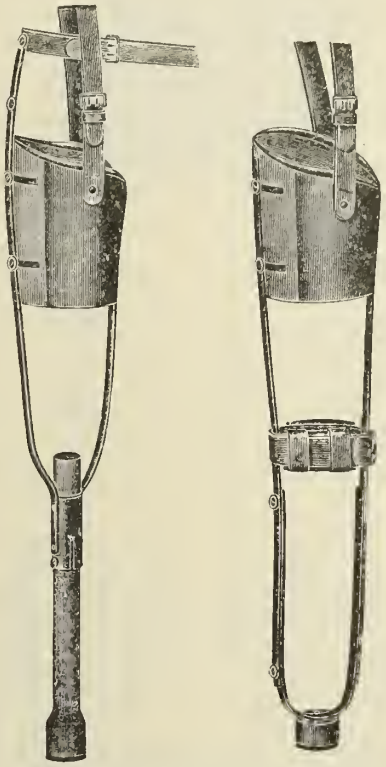
Figs. 1 and 2. Belt for shoulder and thigh amputations.

described, however, are such as are intended for the treatment of wounded soldiers; and while much of this apparatus is intended for temporary use only, there are a few devices which are of such a nature that they will no doubt become popular in general hospital practice.

Fig. 3. Device for fractured lower jaw.

One of these is a strong webbing belt with buckles and straps, to which a metal hook is attached at the proper place to keep a tourniquet in place and prevent it from slipping in shoulder and thigh amputations. The illustrations (Figs. 1 and 2) fully show the construction and method of application.

Another device which, according to reports from German military hospitals, has proven very satisfactory is a splint and bandage combined (Fig. 3) to keep the fractured lower jaw in position. A flexible piece of metal is shaped to fit the chin. Rings are fastened to this for the purpose of connecting elastic straps, which in turn are fastened by means of buckles to a universally adjustable head bandage. Thus the device can be employed on any size of head, and inasmuch as the chin-splint is flexible and the whole apparatus sterilizable, it may be used over and over again on different patients. It is especially pointed out that the patients may be dressed quickly and that very little dressing material and no bandages are needed. The quantity of these items used at present by



Figs. 4 and 5. Artificial legs for temporary wear.

some of the belligerents in Europe amounts to considerable; and as a rule economy in this also is appreciated in general hospital practice.

Figs. 4 and 5 illustrate two "peg-legs" intended for temporary wear after amputation of the leg or thigh. The shafts are so arranged that they may be made to fit any sized thigh. By simply unscrewing and reversing the shaft with the outer steel bar the leg can be worn on the other side, therefore no rights or lefts are necessary. Inasmuch as the legs are also adjustable as to length, it is readily seen that these devices must be of great service in military hospitals. One would say, moreover, that a few of these peg-legs would not be out of place in a large general hospital, as the use of them would enable at least some of the patients to leave their beds sooner than otherwise, and would also prepare them for the future use of a proper artificial limb.

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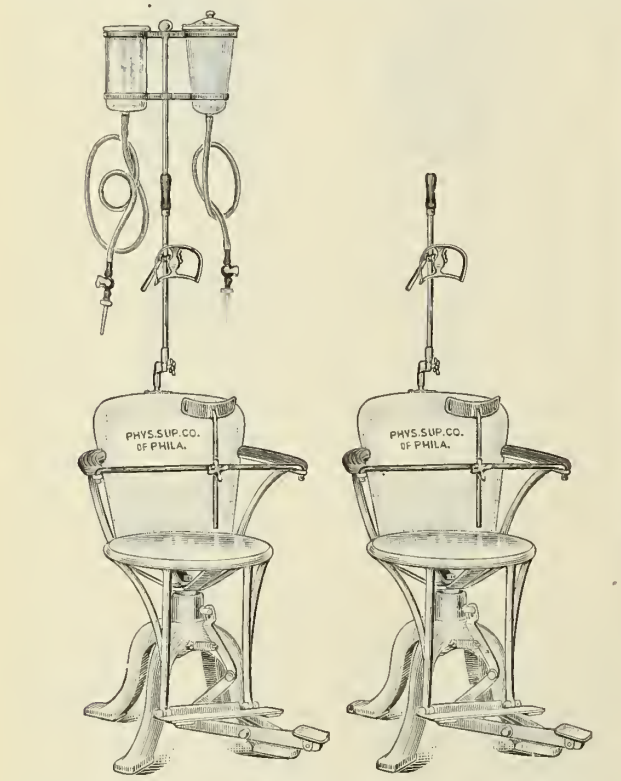
David Schwab, who was superintendent of the Hebrew Hospital and Asylum at Baltimore, Md., for six years, is now supervising the construction and equipment of the new Nathan and Miriam Barnert Memorial Hospital in Paterson, N. J.

### American Model of the Barany Rotating Chair

During the last few years otologists have been paying much attention to the study of the semi-circular canal and the examination of the ear for intracranial localization. As a special chair for conducting turning tests is required in this work, a number of different models have been brought out abroad and in this country, but the chair devised by Dr. Barany, of Vienna, has always been pointed out as the only one fulfilling all the requirements.

The only reason why this chair has not become more popular in this country is the fact that its construction is rather complicated and consequently very expensive. Under the guidance of the staff members in the department of neuro-otology of the University of Pennsylvania a Philadelphia surgical instrument firm has developed a chair which has proven entirely satisfactory in the work carried on in that institution.

A cross-bar with adjustable head-rest for the front of the head can be inserted into the arm rests, while a head-rest, also adjustable, is attached to the upright bar at the back of the chair. To this upright bar a handle is attached for the purpose of rotating the chair, and for instantaneous stoppage a foot lever is provided.




Barany rotating chair, with and without douche attachment.

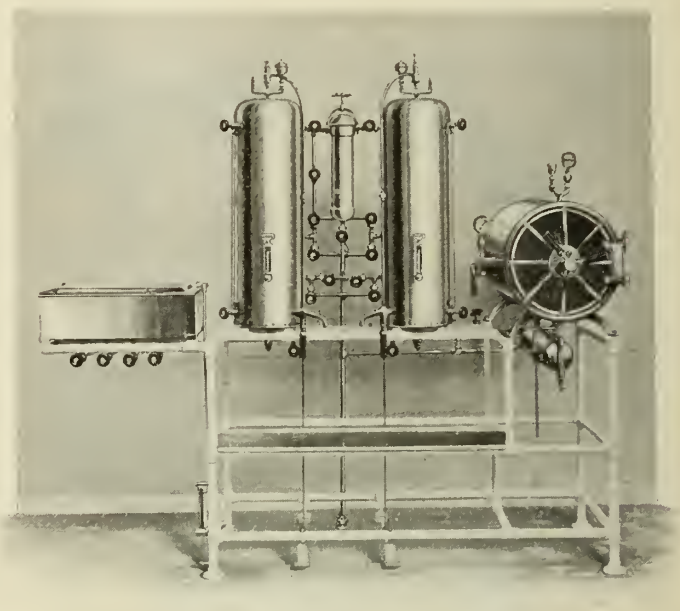
The remainder of the construction of the chair is such that it may be used as an examining chair for eye, ear, nose and throat work. In addition to the special purposes for which it was principally designed—such as the study of nystagmus, after stimulation of the ear; the differential diagnosis between the ear lesions and brain lesions; the intracranial localization according to Barany's pointing reaction; and the caloric test with hot and cold water—a complete douching outfit is provided.

### A Simplified Combination High Pressure Sterilizing Plant

The accompanying illustration shows a high pressure sterilizing plant in the construction of which the manufacturers, instead of adding more and more complicated features to the equipment, as has been the tendency with some manufacturers in the past, seem to have given special attention to simplicity as well as efficiency.

The piping and the valves are all easily got at for cleaning as well as for operating. The combination stand has but four legs; the same sterilizers separately mounted would require sixteen legs. The cover of the instrument sterilizer is raised by a foot lever and is prevented from slamming by a pneumatic check. The sterilizer has a steam coil for heating, and valved waste and water connections. Apparently nothing is omitted that would save time or effort of the operator.

The water sterilizer contains the usual parts, the filter, safety valve, water gauges, etc., and it has the heating and cooling equipment for both reservoirs separately controlled. Formerly it was considered sufficient to provide a cooling coil for the "cold" reservoir only, but with this sterilizer it is possible to cool water in both reservoirs to a usable temperature immediately after sterilizing, thus saving considerable time.



Simplified high pressure sterilizing plant.

The ordinary water sterilizer draw-off valve is an unsightly, leaky contrivance, often difficult to operate and requiring the use of one or both hands. The foot-operated valves employed in this apparatus seem to be the nearest approach to perfection yet designed for this purpose. To draw water requires merely the pressure of one of the foot levers. Release of this lever permits the valve to close instantly by the action of a heavy spring. The levers are attached to the stand and do not touch the floor.

Each of these draw-off valve mouths is piped to the safety valve of the corresponding reservoir, so that during each sterilization, when the safety valve blows, the mouth of the draw-off is thoroughly steam-flushed (sterilized). Then, too, by this connection the exhaust from the safety valve is kept from spattering the walls and ceiling and is delivered instead where it is least objectionable.

The interiors of the water sterilizers can be cleaned thoroughly by any handy man without removing the reservoirs from their bases, and with no interference with the piping. A hand hole is provided for this purpose in the base, this feature of the plant being similar to modern practice in steam boiler construction.

The manufacturers are ready to guarantee that this dressing sterilizer produces dry, sterile dressings, in accordance with recognized standard methods under ideal conditions and in less time than required by other types of sterilizers. The main operating valve, as well as the others, are located up in front, perfectly accessible and close to the gauges, which tell the operator what is happening within the sterilizer. The door has a safety device which tends to prevent the operator from opening it while there is steam under pressure within the chamber, a feature well worth considering, as it will prevent accidents such as have occurred in the past from this source.

There is no space required at either end of the outfit for operating purposes, which means an occupation of minimum floor space. The sterilizers are manufactured by the Wilmot Castle Company, of Rochester, N. Y.

### French Operating Chair-Table

Dr. T. R. French, of New York, has had designed a combination chair and table which has many advantages, especially for those operating about the head.

There has always been a need for a chair and table which would permit of the patient being quickly changed from one position to another, and few tables are suitable for mastoid, tonsil, goiter and other operations about the head or neck. Many hospitals use a regulation surgical table, often improvising some form of elevator, cushion or other device for placing the patient.

Dr. French calls attention to the marked decrease in the quantity of blood lost, the small amount of anesthetic required to produce narcosis, and the lessened strain on the operator; the latter due, in a large measure, to the patient being in the same topographical relation that is used in ordinary office examinations. He dismisses the subject of danger from blood flowing into the windpipe, as he is convinced "that the fear of blood flowing into the air passages is based upon theory and not upon fact."

French chair-table in reverse Trendelenburg position.

Continued practice with the upright position, where the elevation is made without jarring, disproves the belief in danger to an anesthetized patient in this posture. The elevating racks on Dr. French's chair-table are milled and consequently work smoothly, so that the raising of the patient from the supine is free from vibration. The absence of any tremor in the crank-operated racks and gears adds to the value of the chair-table in preserving the blood balance.

The table is adjustable in height, permitting the surgeon to operate either standing or sitting; the raising and lowering being very easy. Furthermore, a simple device permits the tipping of the top into the Trendelenburg posture.

Those who have seen the ease with which operations are performed when the chair-table is used are convinced that it overcomes many difficulties and conserves the vitality of the patient. The top is in three sections, covered

French chair-table in chair position.

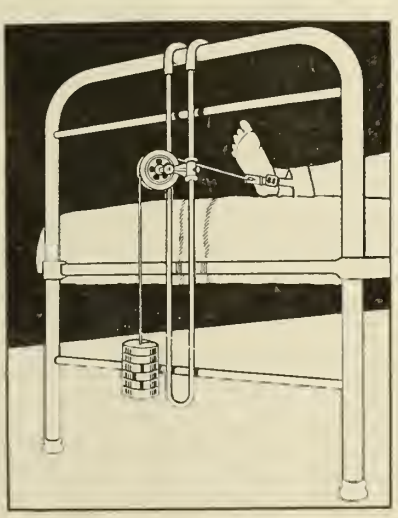
with nicalloy; the center having a corrugated rubber mat to restrain the tendency of the patient to slide forward when in the upright posture.

The head section is adjustable in length, and the seat can be raised; thus the chair-table fits all sizes of patients as if built especially for each case.

Straps, with universal buckles, hold the patient when in the sitting position. The aluminized, tubular steel frame is mounted on large rubber-tired wheels, those under the head end being fitted with floor brakes.

### New Buck's Extension

An extension apparatus which is always ready for use and easily applied is one of the necessities for hospitals, large and small. The accompanying cut shows an apparatus which can be applied in a few minutes to any type of bed without injury to enamel or polish, as the fork-



New extension apparatus.

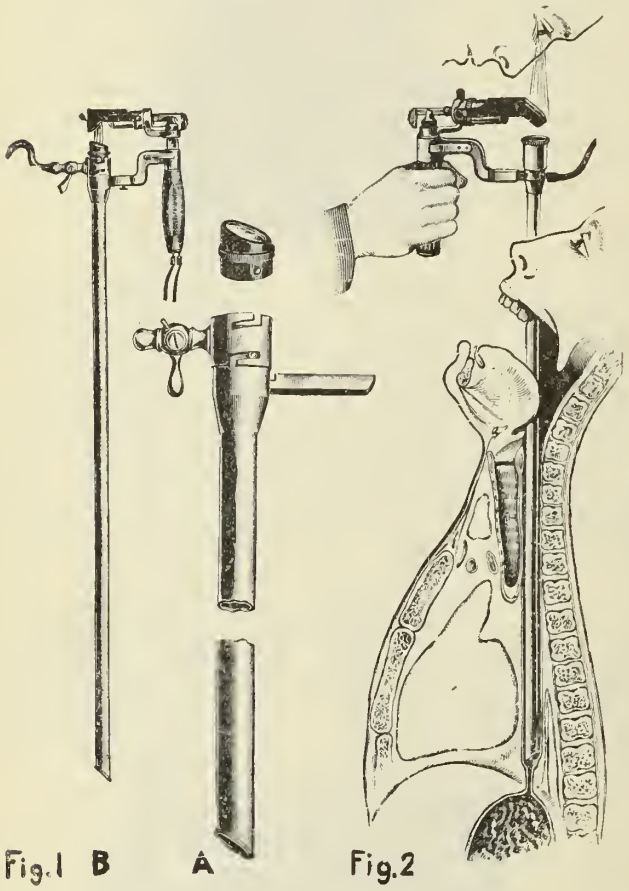
shaped part passing over the rail of the bed is rubber-covered.

The apparatus is constructed of steel and aluminum and weighs only three pounds, without the weights. A so-called automatic hitch is furnished with the outfit which holds the leg in the position required by the operator.

### Combination of Instruments for Direct and Indirect Examination of the Stomach.

BY DRS. W. H. HILL AND G. HERSHEL, LONDON, ENGLAND.

The progress that has been made in the last few years in the methods of diagnosing diseases of the esophagus and stomach has led to the invention of various instruments for direct as well as indirect examination by means of electric illuminating apparatus. The instruments illustrated here are a combination of the well-known Bruening electroscope, a modification of the Killian esophagoscope, and the indirect vision Kausch gastroscope for the examination with the patient in a sitting position.

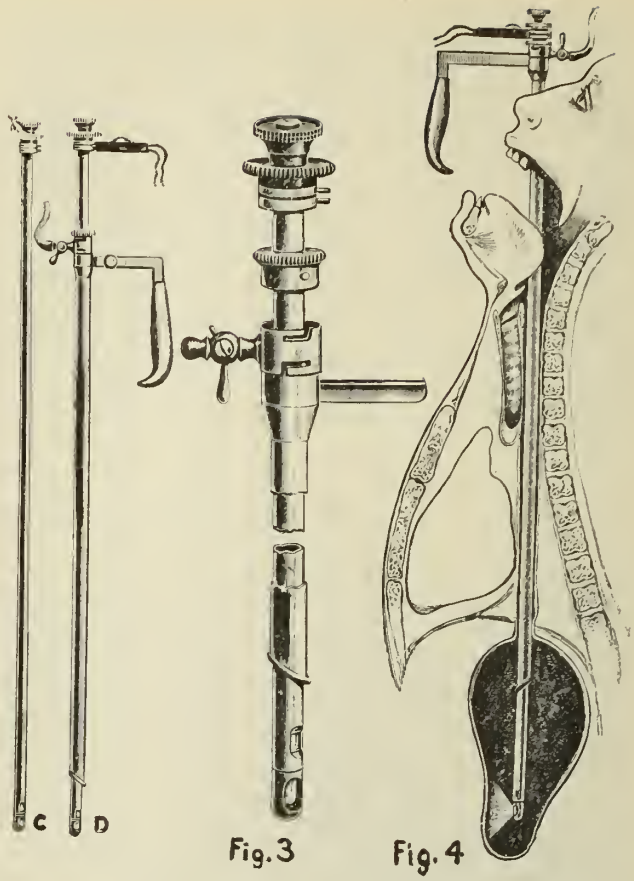



Figs. 1, 2. Bruening's electroscope and Killian-Hill esophago-gastroscope in process of introduction.

Fig. 1, A B, shows the direct vision elongated esophagoscope, to which has been added a nozzle with stop-cock for the purpose of attaching a double hand bellows for inflation, to facilitate introduction and a window to prevent the escape of air.

Fig. 2 shows the esophagoscope in process of introduction. In addition to making an examination of the lower part of the gastric cavity, specimens may be removed by means of the Jackson specimen cutting forceps for the purpose of microscopical examination, and provision is also made for attaching a small camera for taking photographs.

Fig. 3, C D, shows the indirect vision gastroscope (which is constructed on the same plane as a cystoscope) inserted through the esophagoscope. For this purpose the electroscope is removed, and the tube is attached to a handle which is formed at the same angle as the electroscope, which allows exerting considerable leverage on introduction of the tube.




Figs. 3, 4. Direct and indirect vision gastroscopes fully inserted into the stomach.

Fig. 4 shows both tubes fully introduced and the direct vision gastroscope in position to inspect the walls of the stomach as well as the pyloric antrum.

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The Ellis Hospital, Schenectady, N. Y., opened on May 22 a fine new wing, erected at a cost of $100,000. The structure consists of three stories, basement and roof garden. It is fireproof and so far as possible soundproof. All of the doors in the building are of solid wood, with glass handles. The doors are made wide enough for beds to be rolled from one room to another. Floors are of Alaska tile. The new wing will be devoted largely to the care of private patients, children and maternity cases. Some of the rooms open directly on a veranda, and the beds may be rolled out through long windows. The children's rooms are very attractive. There is one large room for girls and one for boys, with a glass-enclosed compartment for the nurses between, the object of this arrangement being to make constant supervision possible. The serving kitchen is interesting. Food is brought from the main kitchen in a dumb waiter, and in the serving kitchen it is kept warm with an ingenious kind of stove which can be heated either by gas or electricity. A toasting grate and places to cook eggs and prepare special dishes are parts of this stove. There is also a tray cabinet, sink, ice box and other kitchen necessities.

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According to a report recently issued by Miss Maude Van Syckle, executive secretary of the Detroit (Mich.) Society for the Study and Prevention of Tuberculosis, the sanatorium maintained by the society discharged as cured 187 out of 237 patients cared for during the last year. Only seventeen patients died. As a result of the work of two visiting nurses during the year it is asserted that patients are now more easily persuaded to enter the sanatorium and there is less resentment than formerly at what was regarded as interference.

# THE HOSPITAL KITCHEN

Any questions regarding equipment or other matters connected with the kitchen and dependent departments of food storage and service will be answered in this department. Address communications to The Modern Hospital, Kitchen Department, Metropolitan Building, St. Louis.

### China vs. Earthenware for Cooking Purposes

Previous to the last twelve or fifteen years all the earthenware used for cooking purposes was imported from Europe, principally from Luxemburg, Alsace-Lorraine and other districts of Germany and France.

The European chefs working in American kitchens, together with the foreign element constantly coming to this country, have created the demand for earthenware cooking utensils, such as casseroles, mustard cups, shirred egg dishes, etc., and this demand has gradually spread into the American household. Enterprising American manufacturers, recognizing the magnitude of the demand for this class of goods, discovered beds of clay as suitable for the manufacture of red-clay earthenware as are the European clays, and started the manufacture in this country; so that now the importation has practically ceased and the only cooking china imported is a negligible quality of white porcelain made from white china clays.

Red-clay earthenware is produced by first moulding the clay to the desired shape, next coating the inside surface with white slip, and then baking in a kiln at a temperature of from 2,000 to 2,200 degrees F. After being taken from the kiln the piece is dipped in liquid glaze, which is practically glass, and is again fired at a lower temperature than the first firing; this second firing melts the glaze and produces the thin skin of crystal glass which, after baking, forms the outside of all red earthenware.

As a result of this process of manufacture, we have, first, a white surface inside the vessel; next, the porous red clay body, which has been heated to the same temperature as the white surface; and outside of this a sheet of glass, which has been produced at a lower temperature than the two other strata to which it is attached.

Take a piece of broken red earthenware and apply a drop of ink to the red surface, then watch the ink rapidly disappear; its progress through the porous clay can be seen through the white lining as it travels by capillary attraction. This proves conclusively that when the clay body of the utensil is exposed to liquid—as it will be if a piece of the inside lining or the outside surface is chipped off—whether this liquid be the greasy water of the dishpan or the water or juices in the food, that liquid will be absorbed into the body of the utensil and will stay there. There it must undoubtedly cause deterioration of the utensil, besides being unsanitary.

Owing to the different densities of the body, the lining and the glaze, the expansion under heat and contraction when cooling is not the same, consequently the more rapid expansion of one or the other substance breaks the surrounding coating into hundreds of small cracks, which process is called crazing. If any colored liquid or grease is put in a crazed vessel it will be found that it settles in these cracks, and, being absorbed by the exposed porous clay beneath, the color cannot be washed out, no matter how much scrubbing is done.

These facts, which may be easily proven by a simple test with a piece of broken or crazed ware and a little ink or dirty water, show conclusively that a china which will not craze and which cannot absorb moisture even when chipped, must be more desirable for cooking purposes from a sanitary point of view. Consider also the standpoint of durability under the heat of the cooking oven: a vessel of uniform density of walls will be immune from breaking by heat, which cannot be the case to the same extent with a vessel like the red earthenware having walls of three different densities.

These considerations led Mr. R. T. Hall, of the Hall China Company, to set to work at East Liverpool, Ohio, several years ago, to see whether a purely vitreous china, having a glaze on the outside and inside, could not be produced from a mixture of white china clays, some imported from Europe and some found in this country, at one firing and at a temperature such as to preclude breakage inside any heat possible in cooking.

After several years' experimenting the new Hall vitreous chinaware was produced about two years ago, and today is the only chinaware with body and glaze produced at one firing. It is fired at a temperature of 2,400 degrees Fahrenheit, and the coating of leadless glaze is applied before the firing has taken place; therefore a homogeneous material, all of one density, is produced, which is absolutely impervious to moisture and susceptible of only one degree of contraction and expansion.

More costly materials make the cost of the new American product about 50 percent more than that of the red earthenware; however, it is a question whether the cost, spread over a year or two, is not really less than that of the older form of utensil, considering the factor of loss by breakage and crazing, in addition to the unsanitary conditions, which are bound to exist in any chipped or crazed utensils which have absorbed the moisture of the dishpan.

### Hospital for Indians in Canada

The Canadian Department of Indian Affairs has recently built a hospital at a cost of $10,000 for the benefit of the school and of the Indians of the surrounding reserves. It is a substantial frame building, on a site within 300 feet from the school, and has accommodations for 25 patients. The basement and a veranda extend the width of the frontage. On the ground floor are the doctor's office, men's ward, women's ward, dispensary, operating room, dining room, kitchen and pantry; on the second floor are two semi-private wards, doctor's bedroom, nurses' bedroom and sitting room, housekeeper's room, bathroom, linen room and a bedroom for emergency help. A separate wing provides an isolation ward for infectious cases. Water and light are supplied from the school plants, and the hospital is heated by two hot-air furnaces in the basement. The nurse in charge, Miss Mabel Jenner, is reported to be fast winning her way to the hearts of the Indians and gradually breaking down their innate prejudice against hospitals.

North Carolina is the first state to combine county homes under a single roof. The Legislature, at the request of the three counties comprising the First Congressional District, has recently authorized the combining of the country homes of these counties, and the single institution will be called "Community House No. 1."

Fig. 1. The Hospital Car at the Enola shops, Pennsylvania Railroad.

## FIRST AID IN INDUSTRIAL SURGERY

### Speed Is not the First Consideration—Safety First—Railway Hospital Car Designed to Take Aid to the Injured Man, not Vice Versa—A Step Forward

[This is part of an address by Dr. Donald McCaskey, Witmer, Pa., before the Industrial Welfare and Efficiency Conference, Pennsylvania Department of Labor and Industry, at Harrisburg, Pa. We are indebted to the *Medical Record* for the illustrations and material.]

There is a fallacious notion that the moment a man is injured he must be rushed at break-neck speed to the nearest hospital. To get there quickly and at all costs is the idea. Everybody tries to help achieve this purpose. It does not matter much whether the injured one is suffering from a hemorrhage; whether he has been profoundly shocked; whether an agony of pain exists; haste is the dominant thought. Every process is speeded up to achieve this end. But this is wrong. It is an extravagant waste of the vitality of the injured patient to rush him under any conditions to the nearest hospital.

First aid does not mean that our machinery must be set in motion with the same dramatic fervor with which our city fire department responds to the alarm of fire. Neither does first aid mean the theatrical and skilled abil-

Fig. 3. Interior of car showing two cots ready for use. A number of stretchers are on hand. Boiling water is kept in a tank at end of car.

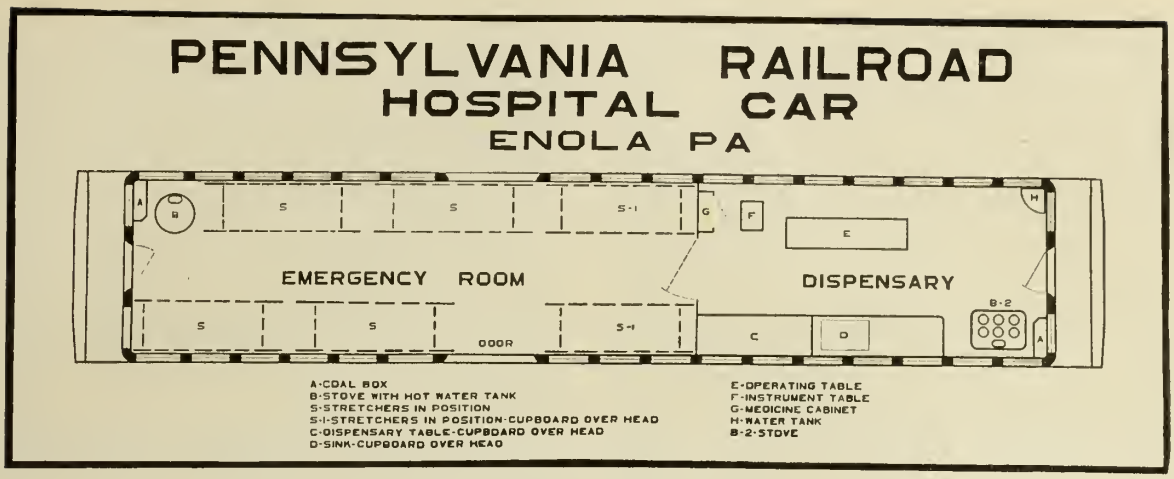



Fig. 2. Floor plan of the Hospital Car.

ity to put a bandage around a man's injured head or injured arm or leg in the seventeenth fraction of a second, as illustrated in motion pictures, particularly; all of which looks very wonderful to the spectator, who, when in the presence of an actual accident, usually stands around loudly critical as to what is done and very emphatic in declarations as to what you should not do.

The major thing to decide in all our first aid work is, "What is best for the injured man or woman?" Certainly haste is not the chief requisite.

Here is another point. Often when a person is injured it is absolutely wrong for that person to be lifted by unskilled hands. The tender sympathies of the surrounding bystanders may be strongly aroused, and every effort may be made by them to afford the injured one such degree of first aid care as they may be able to administer. However, first aid does not mean this type of help, for it is simply and solely because this kind of first aid is so unskilled, utterly incompetent, and usually untrained in the modern methods of first aid science, that bad results ensue.

In our first aid work we don't want to sacrifice everything to speed. Thorough training and first aid competency is the great essential. By having a thoroughly

Fig. 4. Operating room in Hospital Car. Feet of table are set in sockets. Blankets, dressings, instruments and bandages are kept in lockers.

trained man on the spot to treat a superficial wound in a proper aseptic manner the injured man in a great many instances is able to continue with his work and have his wound redressed as the occasion requires.

New standards of efficiency have developed during the past decade not only in medicine and in surgery, but in first aid to the injured. In the Pennsylvania Railroad improvements in first aid method have kept step with improvements in the operating department. Instead of the old principle of speeding an injured man to the hospital irrespective of his physical condition, we find the newer principle, that of taking the hospital to the injured patient, employed on our Philadelphia Division, in the Enola shop and freight yards. At these yards, where over a thousand workmen are employed, General Foreman C. D. Gray has made over an old wrecking train car into a hospital car. He has placed one of his men in charge of this car, who keeps it thoroughly stocked with sterilizers, surgical solutions, bandages, dispensing tablets, stretchers, blankets, etc. The equipment is complete and everything is in readiness to take the hospital car to the injured man as soon as the engine can be coupled to it.

The following is a list of supplies on the hospital car:

Cupboard A. 6 wood blankets, 3 rubber blankets.

Cupboard B. 4 meat platters, 4 sugar bowls, 1 coffee pot, 1 frying pan.

Cupboard C. 6 wool blankets, 3 rubber blankets.

Cupboard D. 2 dippers, 3 meat forks, 3 large spoons, 26 knives, 31 forks, 23 table spoons, 34 tea spoons, 1 can opener, 1 steel, 1 butcher knife, 28 soup bowls, 1 4-qt. pitcher, 1 1-qt. pitcher, 1 2-qt. pitcher, 5 cups, 5 salt shakers, 4 pepper shakers, 6 tin cups, 1 frying pan, 1 roaster, 28 dinner plates, 1 stewing pan, 3 basins.

Cupboard E. 1 bottle iodine, 24 first aid boxes, 4 1-lb. boxes absorbent cotton, 6 5-yd. packages of Red Cross gauze, 1 pound bottle of antiseptic discs, 1 pint bottle of alcohol, 1 roll adhesive plaster 12 in. wide 5 yds. long, 12 rolls 3-in. Linton gauze bandage, 28 rolls 2-in. Linton gauze bandage, 40 rolls 1-in. Linton gauze bandage, 32 different sized splints.

Cupboard F. 1 5-gal. can, 1 coffee pot, 1 bag ground flaxseed, 1 can litholine, 2 Schapps tourniquets 36 in., 2 Esmarch tourniquets, 1 Fowler's infusion apparatus.

Cupboard G. 2 rolls antiseptic towels, 2 boxes individual drinking cups, 4 cotton blankets.

Cupboard H. 4 rolls 3-in. gauze bandage, 5 rolls 2-in. gauze bandage, 4 rolls 1-in. gauze bandage, 6 hot water bottles, 1 ½-lb. bottle chloroform, 100 tablets physiological salt solution, 1 drop bottle for chloroform, 1 Pilling folding Yankauer mask, 1 bottle Martin's toilet wash, 4 bottles Carron oil, 1 bottle antiseptic discs, 1 bottle compressed boric tablets, 1 bottle spirits of ammonia, 1 bottle cocaine, 1 jar moist gauze 5-yds., 3 medicine droppers, 1 eye cup, 5 1-yd. packages gauze, 10 1-oz. packages absorbent cotton, 1 box thymol iodide, 1 bottle chlorodyne, 1 aseptic hypo syringe, 25 hypo tablets atrophine sulphate 1-100 gr., 25 hypo tablets morphine sulphate 1-4 gr., 25 hypo tablets strychnine sulphate 1-30 gr., 25 hypo tablets digitalin pure (German) 1-50 gr., 1 1-lb. bottle of dioxygen.

Drawer J. 12 towels.

Drawer K. 5 pillows, 12 pillow cases, 11 sheets.

Miscellaneous. 8 stretchers, 1 operating table, 1 slop bucket, 4 cots and mattresses, 3 tables, 6 benches, 8 chairs, 6 camp stools, 1 instrument table.

When a workman is seriously injured, instead of lifting and bumping him and perhaps causing him to lose a quantity of blood and to suffer further shock, the hospital car is brought to him. Under the competent direction of the Red Cross attendant the injured man is promptly treated to first aid. His chances for prompt recovery and an early return to duty are immeasurably greater under these conditions than when he is handled by the untrained spectator or fellow-employee. Merely to apply mechanically a lot of bandages, no matter how cleverly the series of movements may be carried out, is not modern, efficient first aid.

Often a man who is slightly injured is induced to believe that he is seriously hurt, if sufficient dramatic interest is injected into his case by the first aid efforts of bystanders whose hearts are stirred. I have also a theory that many a man or woman slightly injured is started on the road to malingering, just because of incompetently applied first aid treatment.

First aid has certainly outgrown its swaddling clothes. A first aid package of gauze and iodine solution is not enough. There must be training behind the "man behind the gun," and not merely sympathy and a vague recollection of certain first aid principles once half-learned; there must be a thoroughness that goes with special first aid study and training.

## NATIONAL CONFERENCE OF CHARITIES AT BALTIMORE

### The Spirit of War and a Propaganda of Peace Among Social Workers, as Seen by T. J. Edmonds, a Member From Cincinnati

"The best Conference ever." So said the delegates to the forty-second National Conference of Charities and Corrections which closed at Baltimore May 19.

Best, not because the weather man shut off the steam, not because "Baltimore" and "beautiful" form an alliteration which is true as well as poetic, not because Baltimore is south of Mason and Dixon's line and is therefore pervaded with that famed spirit of Southern hospitality, although all these things are facts not unworthy of note; not even best because it reached the high water mark in attendance, registering 2,450 delegates as compared with 1,920 in the largest previous year.

Mrs. Glenn struck the key-note in the presidential address, "A Prelude to Peace." She did not talk war issues; she did not even try to foretell the war's time of closing or its after-effects. Her theme was this: that whatever the causes and whatever the obvious results, it is our business as social workers and as Americans to be ready to offer to Europe the real sources of strength for recuperation. These sources of strength lie in the restoration of normal family life, in the ability to return to the ordinary operations of daily business, in the education of the next generation for the big tasks before them, in the ability of the average man to stand up to the drudgery of the day's job and to retain his grip on the better things of life without the stimulus of brass bands and spectacular events, and in the readiness to sink differences and to forget them.

Neither did any other speaker in the entire Conference program indulge in war talk. The Conference was so neutral that President Wilson would have approved, so peaceful that Bryan would have applauded it, and withal so warlike that Roosevelt would have been delighted. Warlike, however, only in its marching spirit, its *esprit de corps*, and its faith, courage and inspiration. We have heard that war submerges party differences; so the Conference program sounded this note: that social workers are engaged in a war on destructive social conditions; that the general cause is bigger than the particular work

of any organization or individual; that we must look at the field as a whole and work for the entire social program rather than for the preeminence of our own little function. This was seen in the discussions on public and private outdoor relief.

War has its strategists and its tacticians; and the present war emphasizes the value of the former. Social workers have learned to become strategists and to plan broadly for the future. This was shown in the discussions of the unemployment situation. Out of the turmoil of last winter, the inevitable disruption of regularity, and perhaps of standards, has come a planning for the future in a bigger way than ever before. Remedies were suggested for the industrial displacements of the present period and even for the displacement which will probably follow the close of the war, in an ascending scale, namely, preparation for adequate relief; public "made work;" cooperating national, state and city labor exchanges; dovetailing of industries with alternating busy and dull seasons; regularization of industries within themselves; education of the market away from the vagaries of fashion and demand which make for rushes and lay-offs; illness insurance; unemployment insurance.

As at last year's meeting at Memphis, so again were the huge tolls levied by preventable disease, inebriety and feeble-mindedness strikingly emphasized by stories and figures. Here, too, was the war spirit shown; a conquest of the discouragement and disgust at the sight of wreckage, and a courage to fight our way inch by inch toward the elimination of causes.

The breadth of planning which characterized the Conference was well shown in the state-wide program submitted by the committee on children. This advocated a state board with adequate provision by means of institutions and "out-patient" work for all four groups of unfortunate children, namely, dependents, delinquents, defectives and neglected.

As a whole the Conference was fine, because of (1) the unity of its carefully planned program; (2) the emphasis on public responsibility; (3) the recognition on the part of the public group of the prime necessity of high standards of efficiency; (4) the attention given to broad community plans and preventive measures; (5) the sane conservatism of the remedies proposed; (6) the harmony of feeling among groups of workers; (7) and the indefinable inspirational quality of the whole thing, which cannot be spread on paper and which cannot be realized unless one were there to feel it.

The forty-third Conference will meet at Indianapolis next year. Its officers, as elected, are: President, Rev. Father Francis H. Gavisk, member of the Board of State Charities, Indianapolis; First Vice-President, James F. Jackson, Cleveland; Second Vice-President, Dr. James T. Gilmour, Toronto; Third Vice-President, Miss Minnie F. Low, Chicago; General Secretary and Treasurer, William T. Cross, Chicago.

## CAMPAIGN FOR NEW SISTERS' HOSPITAL

### West Philadelphia to Have $200,000 Group Under Auspices Sisters of Mercy

For the new Catholic Hospital to be erected in West Philadelphia, which has been mentioned in previous news items, a campaign has now been launched in the city of Philadelphia for the purpose of raising $200,000. The campaign is to be conducted under Catholic auspices and the hospital is to be managed by the Sisters of Mercy, although appeals are being made to the public at large. As planned, the hospital will be of the Italian Renaissance style of architecture and of fireproof construction. The main building will be in the center of a big lot recently purchased by the Sisters of Mercy, which is valued at about $150,000. The entrance will be on Cedar Avenue and will be 54 feet wide and 179 feet long, extending from east to west. From the ends of the main building will extend four wings, each 45 feet wide and 175 feet long. From the rear of the main building a fifth wing will extend north, 40 feet wide and 90 feet long. Thus every room in the house will have plenty of air and sunlight.

To the rear of the north wing will be a building to house the employees of the hospital and also those of the mechanical department. To the east will be the nurses' home, and to the west the convent for the Sisters. The first floor will have rooms for the administration department. The second and third floors will be occupied by rooms and suites for private patients. The maternity department will be on the fourth floor; special surgical cases will be treated on the fifth floor; kitchens, dining rooms for nurses, doctors, nuns and employees will be on the sixth floor, and operations will be performed on the seventh floor. This latter floor will be divided into four separate rooms, each with a separate sterilizing, etherizing and recovery room.

The northeast and northwest wings will be devoted entirely to wards. Each wing will be four stories high. Each will have a large ward and four smaller ones, with accommodations for two patients or more. The southeast and southwest wings adjoining the main building will have accommodations for private patients, twelve on each floor. These wings will also be four stories high. The north wing will have the resident physicians' dining room, bed rooms, billiard rooms, library and recreation rooms on the first floor and the chapel on the second floor. The dispensaries will be in the basements of the northeast and southeast wings and part of the basement of the main building. The receiving ward will be on the east side of the main building in the basement. The basement of the southwest wing will be devoted to a school for nurses.

Each wing, as well as the main building, will have separate diet kitchens on each floor. These kitchens will be connected by dumbwaiters directly from the main kitchen on the sixth floor. The alcoholic ward will be in the basement of the north wing. The fans for ventilating will be in the basement of each building, making each ventilating system a separate and distinct unit. There will be four electric elevators.

An automobile ambulance will be housed at the extreme east of the building, by which it will be possible to bring in patients from nearby points in Delaware county with the utmost speed.

## NEW HOSPITAL FOR NEW YORK CITY'S FINANCIAL DISTRICT

### Needed Institution to Be Opened Under Favorable Auspices

The projected Broad Street Hospital for the financial district of New York City promises soon to become a reality, according to Dr. A. J. B. Savage, one of the promoters. A movement toward the establishment of this hospital was started early in the year, with the indorsement of many prominent bankers, lawyers, business men and physicians of the city. Sufficient funds have now been raised to insure the success of the undertaking and temporary quarters for a thirty-bed hospital have been leased at 109-11 Broad Street.

It has also been decided to purchase a block of ground fronting on Broad Street and a half block fronting on Front and Pearl Streets as a site for a new building to accommodate probably 250 patients, and the promoters hope eventually to secure an endowment of a million dollars.

The Broad Street Hospital is to be a non-sectarian institution and will be devoted to emergency and general hospital purposes. A nominal charge will be made for ward beds and a moderate charge for private rooms. A dispensary will be operated in connection with the hospital.

The organization committee, which has charge of the raising of funds and the equipping of the hospital, is made up as follows: E. L. Wemple, Warner Sugar Refining Co., Chairman; A. J. B. Savage, M. D., Secretary; E. J. Dorgeloh, Assistant Cashier Coal & Iron National Bank, Treasurer; Harry S. Stewart, Counsel; George C. Luebbers, Treasurer Vacuna Co.; M. W. Dominick, Dominick & Dominick; John J. Connell, Chief of Staff, Public Administrator; Victor Ridder, Vice-President N. Y. Staats-Zeitung; William Tod Helmuth, M. D.; Hon. Maurice Featherson, Contractor; H. Ellsworth King; William H. Dieffenbach, M. D.; Hon. John J. Hopper, Register of Sec. Life Saving Service, City of New York; John A. V. Sweeney, M. D. Dr. Savage is secretary of the committee and will be superintendent of the hospital.

The need for a general and emergency hospital in the southern part of Manhattan has long existed. The only hospital facilities available to more than a million people in that section are those of two small emergency hospitals, and it is certain that the Broad Street institution will find a large field of usefulness.

## EMPHASIS ON OCCUPATIONAL DISEASES

### New York Health Department Adopts New History Card to Help in Diagnosis

England, Germany and Italy have long recognized the importance of so-called "occupational diseases" and much valuable data has been compiled. Would it not be a significant advance toward better public health if our hospital clinicians laid a little more stress on the occupational history of their patients? The clinical history card below is being used in the new occupational clinic of the Department of Health of New York City:

Examined by.....(Date).....
Borough
Address

PHYSICAL EXAMINATION — DEFECTS

General Appearance:
Development: Good. Fair. Poor. H't
Nourishment: W't
Facies:
Mucous Membranes: Lips / Gums / Eyes
Fingers: Cyanosis / Clubbed / Deformed
Skin: Color / Eruption / Ulcers
Eyes: Pupils / Fundus — O. D. / O. S.
Teeth / Tongue
Nose / Ears — A. D. / Throat — A. S.
Lungs / Sputum — Expansion
Heart: Size / Murmurs / Blood Pressure
Pulse: Rate / Regularity / Artery Wall

FIRM

Nerves: Reflexes / Twitching / Tremors
Muscular Strength: Rt. / Lt.
Abdomen
Extremities / Varicose Veins / Flat-Foot
Glands / Orthopedic
Blood: Hgb. / Diff. Red and White Cells / Wassermann
Urine / Albumin / Casts / Sugar / Lead, etc.
Remarks and Suggestions:

DIAGNOSIS
INDUSTRY

OCCUPATIONAL HISTORY

*Complaint* *No.*
Name..... Age..... M. F. S.M.W.
Address..... *Fact No.*

INDUSTRY — OCCUPATION — HOW LONG

1 Present.....
Previous.....

2 Description of Work — Hrs. of Work
Materials Handled

3 Exposed to:
a) Extreme Heat or Cold — Moisture
Chemicals — Irritating Fumes — Acids
Dust — Filings — Other Infectious Conditions
Portal of Entry
b) Strain: Muscular — Postural — Nervous
Eye — Ear — General Physical

4 Present History: Special or General Complaint
Alcohol — Syphilis — Chewing { Gum / Tobacco }
Protective Agents: Milk — Masks — Respirators
Clothing or Gloves — Washing — Lunch Eaten Where
Washing, etc. — Ventilation

5 Previous History: Cough
Expectoration (blood?) — Backache, etc.
Night Sweats — Constipation
Loss of Weight or Strength
Pains in Chest
Pneumonia?
Pleurisy?
Asthma, Bronchitis?
Family History of Tuberculosis

6 Previous Occupational Disease?
Fellow Workers Affected

7 Home Conditions: Character of Home
Work at Home — Causes for Worry
Distance from Factory — Transit Facilities
Bed Rooms — Windows — Hrs. in Bed — No. in Bed Room
Food: Kind — Alcohol — Disease in Family
Amount
Tea — Coffee — Recreation — Intelligence

Clinical history card used by the Department of Health, New York City.

Deeds, New York County; W. Channing Burbank, Clark, Childs & Co.; H. B. Van Note, Typewriter Supplies; Walter G. Crump, M. D.; Thomas J. McBride, Ticket Agent; James Rascovar, President New York News Lawyer; Robert H. Klitz, Jung & Klitz, Wholesale Jewelers; Charles Gennerich, M. D.; Walter L. McCorkle. Lawyer; Theodore L. Lutkins, Leather Importer; Ralph Bureau; Joseph H. Fobes, M. D.; Hon. Alton B. Parker, H. Stewart, M. D.; H. E. Smolen, Franklin-Mann Co.,

Contracts have been awarded for the construction of the first three buildings of the new California State Hospital at Norwalk, near Los Angeles. The ultimate group is to consist of twenty-four main buildings, and in addition there will be farm buildings, residences, etc. The cost of the entire plant, including equipment, is estimated at $1,200,000. The plans are being drawn under the direction of state architect George B. McDougall.

The Charity Hospital at New Orleans is erecting a ward for tubercular patients.

# THE MODERN HOSPITAL

*A Monthly Journal Devoted to the Building, Equipment, and Administration of Hospitals, Sanatoriums, and Allied Institutions, and to their Medical, Surgical, and Nursing Services*

Vol. V *August, 1915* No. 2


## JOSEPH L. HUDSON MEMORIAL BUILDING OF HARPER HOSPITAL, DETROIT

### An Exclusively Surgical Unit Intended as the First of a Complete New Group—Embodies the Best Architectural Practice of the Day in Block Type Construction—Some Unique Features

By WAYNE SMITH, M. D., Superintendent

THE Joseph L. Hudson Memorial Surgical Unit, Harper Hospital, is the first unit of a new hospital designed ultimately to replace the present hospital buildings, which were erected about 1888. This unit, as its name implies, is planned exclusively for the care of surgical patients. The building extends in a north and south direction. Across the north end, like the cross on a T, is the service building, large enough to serve the estimated future capacity of 750 patients.

The surgical building is connected to the administration building, which is also the medical building, by a corridor, three stories high above the basement. It is intended to extend this corridor to reach the proposed medical building at the rear, and then the administration building will be torn down and a new one erected. This will give a general outline of an E with the service building north of the middle bar, and the out-patient, power, laundry and operating buildings still farther north.

The surgical building is directly connected by a corridor to the operating building and at present the second floor is used as a maternity department.

The buildings are of reinforced concrete floors with solid brick walls, and are faced with a brown vitreous brick. The floors throughout, except in the corridors, are terrazzo, carried up against the wall with a cove base six inches in height. The corridor floors, and a strip six feet wide through the large wards, are rubber tile, which makes a noiseless, easily replaceable floor. The tile is inset to come flush with the terrazzo border. Along the walls is a secondary projection and cove to prevent furniture from marring the walls by being pushed against them.

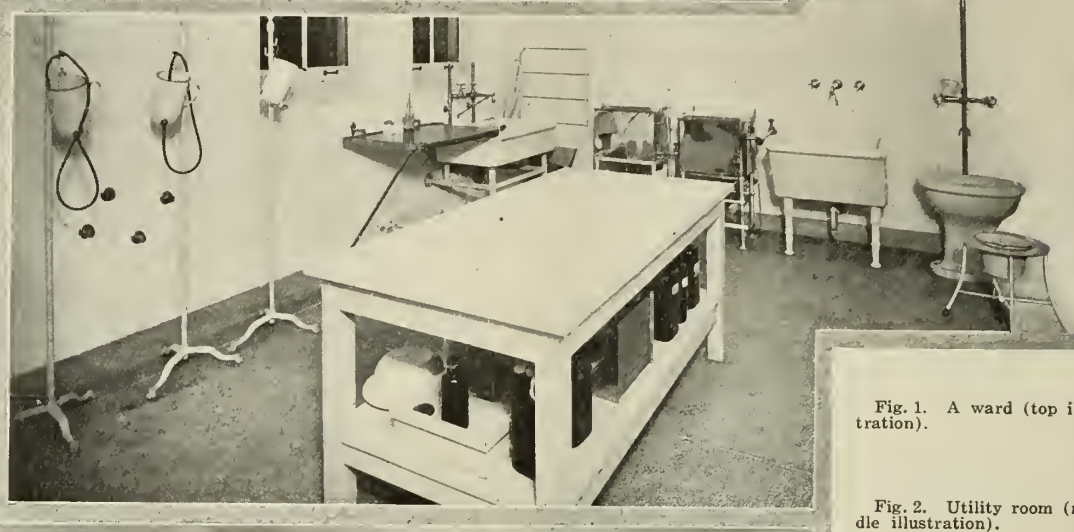
There is no wood trim anywhere, a drawn metal casing strip with a very slight radius having been substituted, which is proving itself very satisfactory. The greatest care is taken throughout not only to exclude dust-catching surfaces, but to leave no corners where dust or dirt can remain.

The lavatories in the patients' rooms are of special design, "Harper" lavatories, with nothing to floor, and an integral back, set in marble or vitrolite, flush with the wall.

The utility, preparation, toilet and bath and dressing rooms have vitrolite glass wainscoting set on the terrazzo base and flush with it and with the plaster above. The stall partitions are made of the same material. There are no pipes visible in the entire building except in the basement where the mains and branches are run exposed on the ceiling in part, though the larger part of these are run in a sub-basement. The radiators are entirely wall-hung and the supplies and returns are run in wall chases.

The heating system is a modified plenum system with supply of washed air at desired temperature to private rooms and wards and an exhaust from each room. The radiators are equipped with modulating valves which permit the heat to be regulated for each room independently.

The Hudson unit is 196 feet long by 47 feet wide, six stories and a basement; and the service



Joseph L. Hudson Memorial Building, Harper Hospital, Detroit, Mich.

Fig. 1. A ward (top illustration).

Fig. 2. Utility room (middle illustration).

Fig. 3. Dressings room, taken at night by indirect light (bottom illustration).

Fig. 4. Joseph L. Hudson Memorial Building, Harper Hospital, Detroit, Mich.

building is 149 feet by 57 feet and one story and a basement. The basement is eleven feet clear height and five feet below ground level, and is consequently very well lighted and can be used for every purpose except patients' rooms.

The capacity of the building is 186 patients, 66 in private wards and 120 in wards of four or more beds; and it is sanitary, fireproof and as nearly noiseless as can be made.

The service building contains the kitchen, store rooms, bakery, help's dining rooms, special diet and diet training kitchen in the basement; and the nurses', staff and superintendent's dining rooms on the first floor, and along the corridor toward the administration building the superintendent's and assistant superintendent's offices, and visiting doctors' rooms.

In the surgical building the first three floors are private rooms, and the top three floors are wards, with one large ward of twenty-four beds and three four-bed wards.

Each floor has a dressing room, preparation, nurses', utility and serving rooms, and on the south end is a large solarium.

The ward floors are equipped with small laboratories and the private room floors with flower rooms, a feature unique in this hospital.

The airing balconies have been very carefully considered and there are balconies or arcades on the first, third and fourth floors, and a large roof garden with elevator and kitchen service. This roof garden is protected by a canvas cover so that patients can remain there except during the most severe storms. The balconies on the fourth floor open directly from the wards through triple sash windows to the floor, wide enough to allow the passage of a bed.

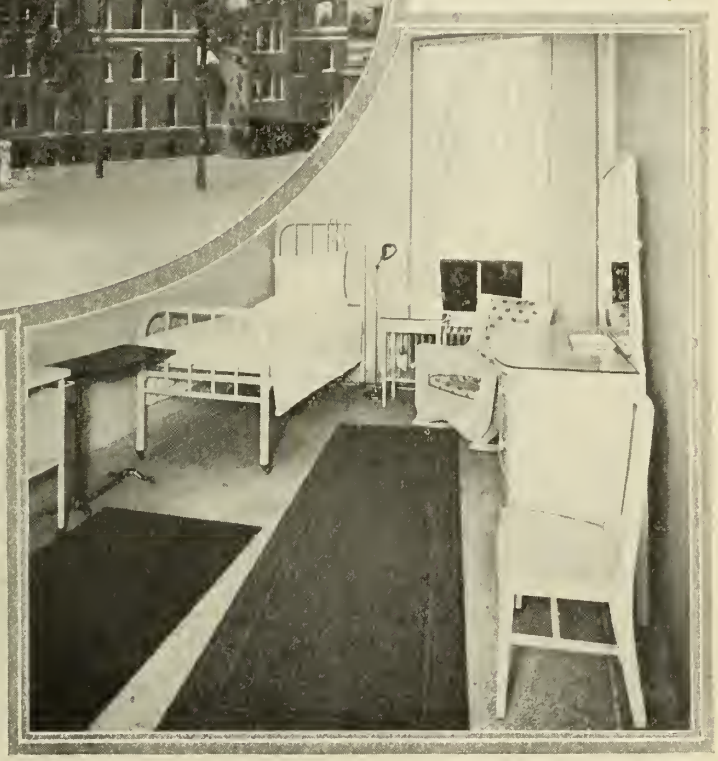


Fig. 5. Joseph L. Hudson Memorial Building. A private room.

The nurses' room contains the medicine cabinet and sink, and the wall next to the corridor has a glass panel below which is the signal box for the light signal system, so that the nurse on duty, looking at the signals, has command of all who pass through the corridor. The utility and serving rooms are opposite each other in the center of the building, and they are cut off from the south half of the hospital by a pair of doors in a glass partition, and the serving room has a small subcorridor for service, to eliminate entirely the noise of dishes, conversation among nurses, etc. The whole idea, in fact, is to have as noiseless a hospital as possible; to this end also elevators and stairs are isolated from the corridors, double gyp-

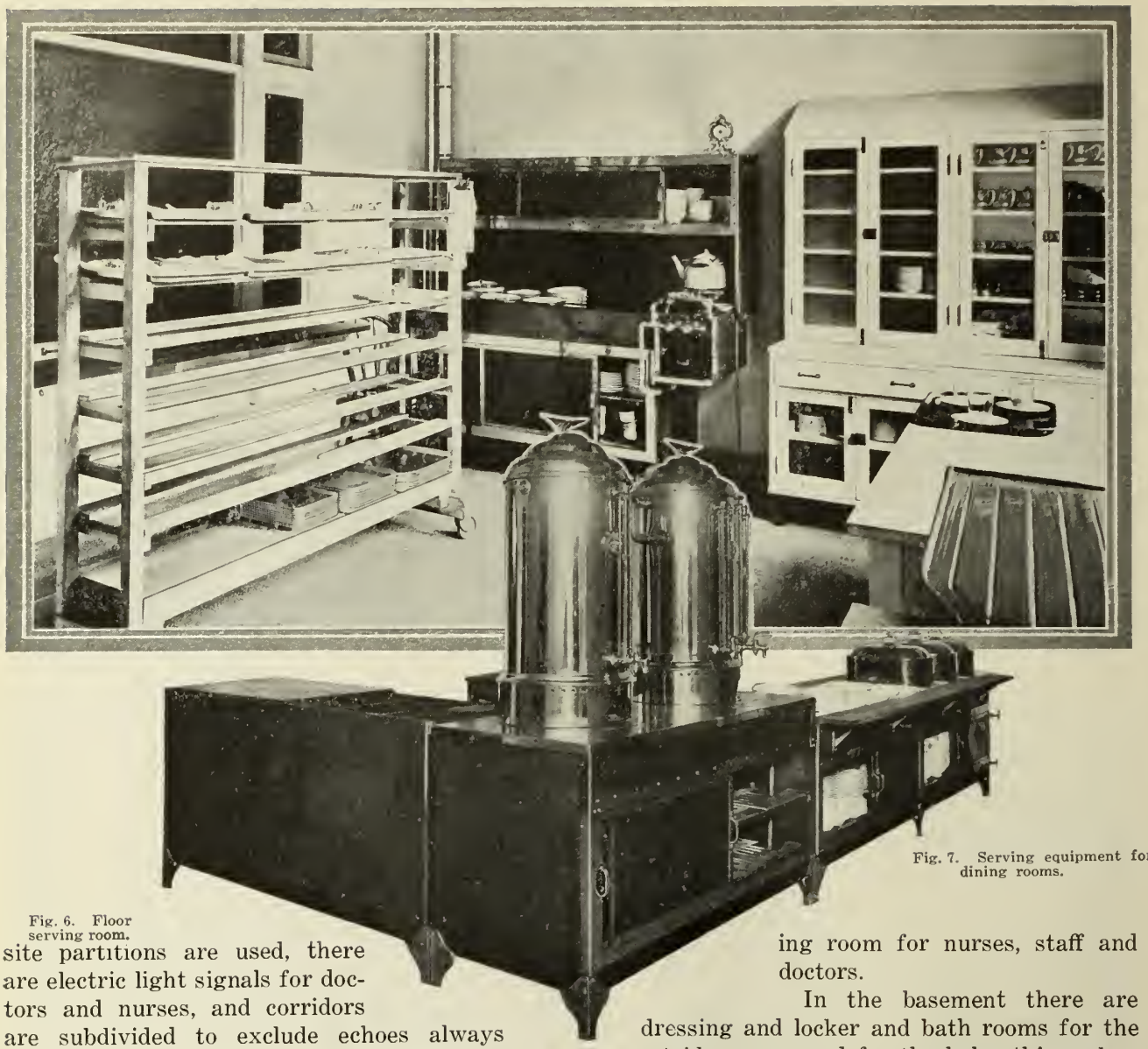


Fig. 6. Floor serving room.

Fig. 7. Serving equipment for dining rooms.

site partitions are used, there are electric light signals for doctors and nurses, and corridors are subdivided to exclude echoes always found in a long corridor with smooth walls.

The entire equipment is as complete and as efficient as possible. The kitchen is equipped with all manner of electrically driven bread cutters, vegetable peelers, coffee grinders, etc., and the most advanced methods in mechanical operation have been followed.

The telephone system is most complete, comprising as it does an intercommunicating system for the hospital, and a city connection from each private room and from the kitchen, bakery, store room, laboratories and nurses' rooms. The building is equipped with an incinerator and a vacuum cleaning apparatus, and the refrigerators are cooled by brine circulation, the machine having a capacity of 25 tons per day.

There are two dumbwaiters, of the electric push-button type, from the basement serving room to the ward serving rooms on all floors and the roof, and also from the kitchen to the serving room for nurses, staff and doctors.

In the basement there are dressing and locker and bath rooms for the outside nurses and for the help; this makes it very convenient for the nurses and help to come in, bathe, change to their uniforms or working clothes, and reverse the process when leaving. The help are also given separate dining and serving rooms in the basement, the arrangements for their comfort being very complete.

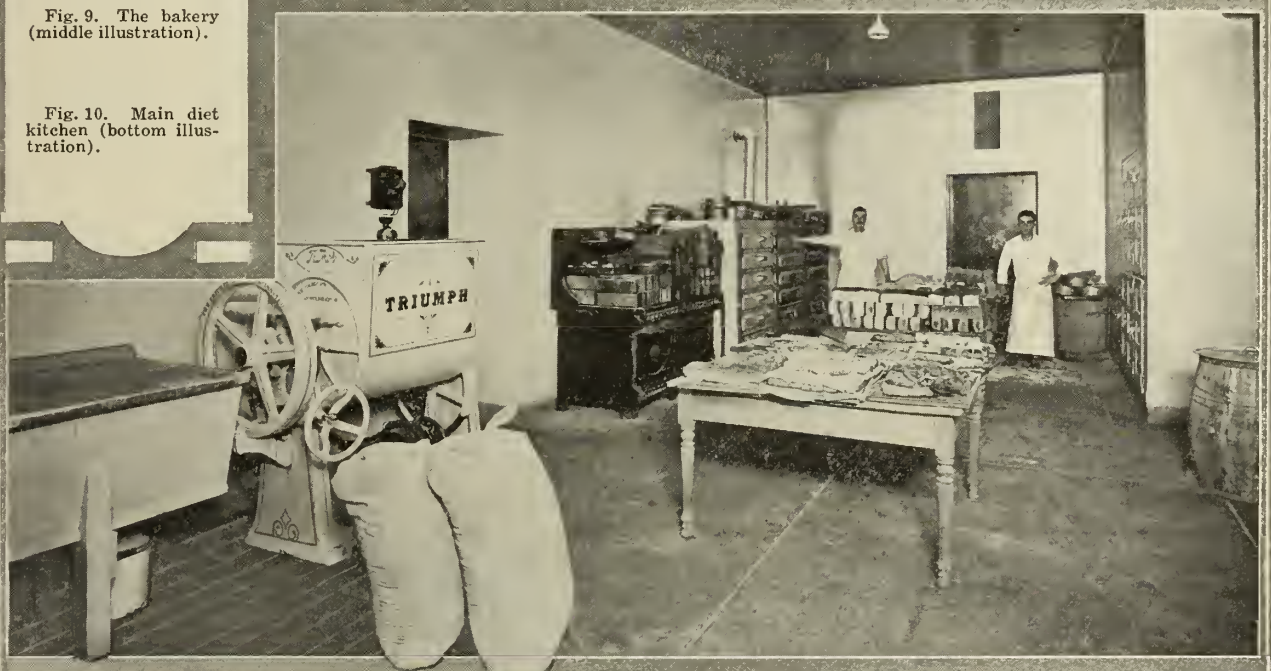
The following is a more detailed description of the equipment on each floor of the building. One must keep in mind, however, that this is an exclusively surgical building and planned and equipped for no purpose other than the treatment of surgical cases.

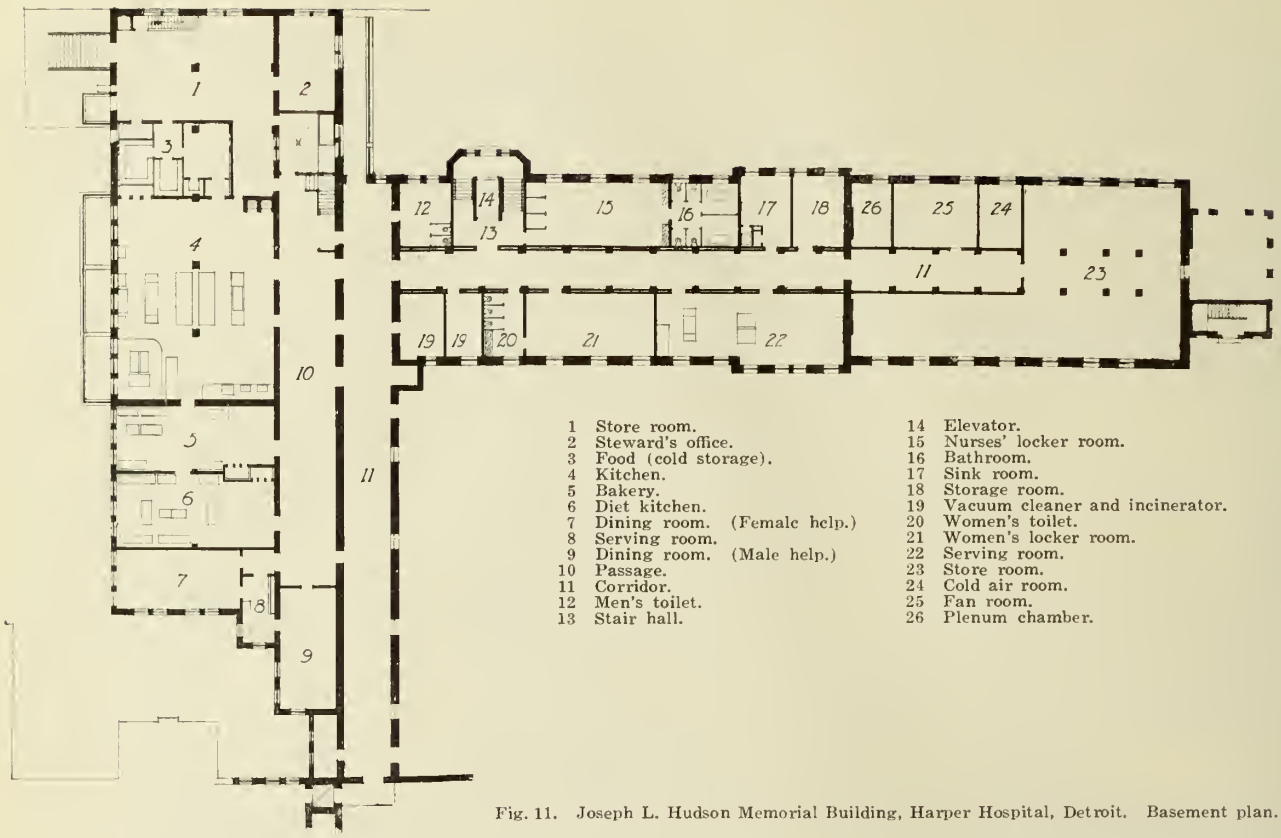
On each floor one finds a head nurse's office, chart room and dispensary, a nurses' utility room with blanket and bed pan warmer; and a solution locker, built in the walls with flat surfaces and the cove base of terrazzo, leaving no space for the accumulation of dust or dirt. In this room are the utensil sterilizer, bed pan washer and ster-

Fig. 8. The kitchen (top illustration).

Fig. 9. The bakery (middle illustration).

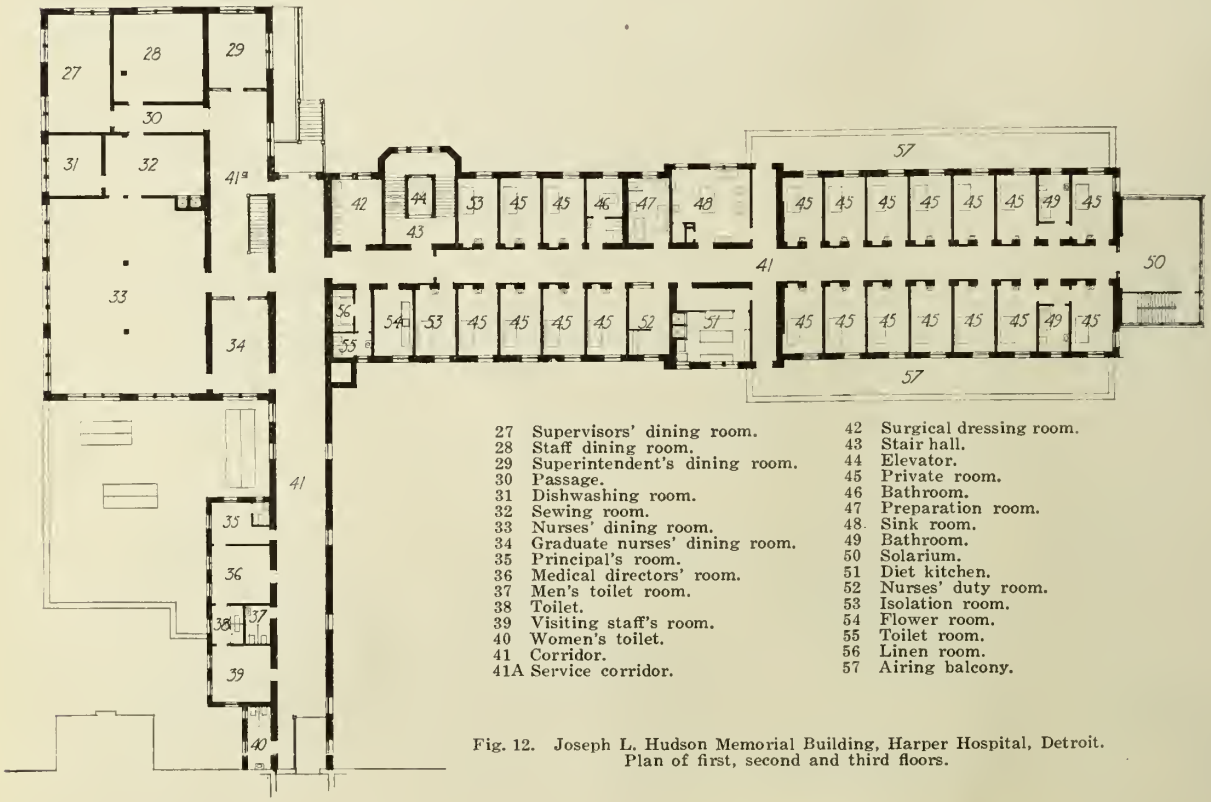
Fig. 10. Main diet kitchen (bottom illustration).





1 Store room.
2 Steward's office.
3 Food (cold storage).
4 Kitchen.
5 Bakery.
6 Diet kitchen.
7 Dining room. (Female help.)
8 Serving room.
9 Dining room. (Male help.)
10 Passage.
11 Corridor.
12 Men's toilet.
13 Stair hall.
14 Elevator.
15 Nurses' locker room.
16 Bathroom.
17 Sink room.
18 Storage room.
19 Vacuum cleaner and incinerator.
20 Women's toilet.
21 Women's locker room.
22 Serving room.
23 Store room.
24 Cold air room.
25 Fan room.
26 Plenum chamber.

Fig. 11. Joseph L. Hudson Memorial Building, Harper Hospital, Detroit. Basement plan.



27 Supervisors' dining room.
28 Staff dining room.
29 Superintendent's dining room.
30 Passage.
31 Dishwashing room.
32 Sewing room.
33 Nurses' dining room.
34 Graduate nurses' dining room.
35 Principal's room.
36 Medical directors' room.
37 Men's toilet room.
38 Toilet.
39 Visiting staff's room.
40 Women's toilet.
41 Corridor.
41A Service corridor.
42 Surgical dressing room.
43 Stair hall.
44 Elevator.
45 Private room.
46 Bathroom.
47 Preparation room.
48 Sink room.
49 Bathroom.
50 Solarium.
51 Diet kitchen.
52 Nurses' duty room.
53 Isolation room.
54 Flower room.
55 Toilet room.
56 Linen room.
57 Airing balcony.

Fig. 12. Joseph L. Hudson Memorial Building, Harper Hospital, Detroit. Plan of first, second and third floors.

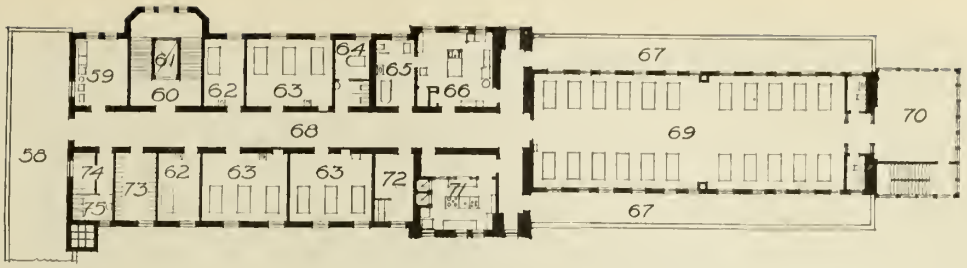



Fig. 13. Joseph L. Hudson Memorial Building, Harper Hospital, Detroit. Plan of fourth, fifth and sixth floors.

58 Airing gallery.
59 Surgical dressing room.
60 Stair hall.
61 Elevator.
62 Isolation room.
63 Three-bed ward.
64 Toilet and bathroom.
65 Preparation room.
66 Sink room.
67 Airing balcony.
68 Corridor.
69 Twenty-two-bed ward.
70 Solarium.
71 Diet kitchen.
72 Nurses' duty room.
73 Locker room.
74 Linen room.
75 Toilet room.

ilizer, gas plate, slop hopper and sink. The walls from the cove base up are of vitrolite panels to a height of seven feet.

In the preparation room is the sitz bath, also a large porcelain vitreous tub set on cove base of terrazzo, easily accessible on all sides, with a large intake of hot and cold water, a "Harper" lavatory and the toilet. The next room is finished in the same way with bath and toilets. At the north end is the dressing room, with surgeons' sink, hopper, instrument sterilizer, utensil sterilizer and water sterilizers, operating table, etc. Just across is the linen closet and nurses' toilet.

All six floors are furnished exactly the same, with the exception of the ward floors, which have the addition of a laboratory, with all the latest equipment for laboratory work.

On the ward floors there are two toilet rooms for ward use, opening off the vestibule between the large wards and the solarium, and on the private room floors there are two suites, with private baths in the same relative position.

The architects were Malcomson and Higginbotham, of Detroit. Mr. Joseph S. Stringham, an eminent engineer, and Mr. Joseph Boyer, were the active members of the building committee, and to their untiring efforts a large share of the credit for our fine building is due.

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## THE ORGANIZATION OF THE DOMESTIC DEPARTMENTS OF THE STATE HOSPITAL FOR THE INSANE AT HOWARD, RHODE ISLAND[1]

### Dual Board Directs Activities—Requisitions—Laundry—Sewing Room—Congregate Dining Hall—Music and Entertainment of Patients—Careful Accounts Kept in All Departments

By ARTHUR H. HARRINGTON, M. D., Medical Superintendent

THE organization of the domestic departments of the State Hospital for the Insane at Howard, Rhode Island, differs in some respects from the organization of like departments in most other hospitals for the insane. The reason for this is found in the method of administrative control of this hospital. The hospital is governed by two boards, the Board of State Charities and Corrections and the Board of Control and Supply. The former board appoints the officers of the institution, fixes all salaries and wages, and supervises, through the superintendent, its internal administration and the sociological phases of the care of its patients. The Board of Control and Supply has charge of the purchasing of all materials and supplies, and directs the repairs and construction of all buildings.

Another factor which enters into the situation is that there are located at Howard, besides the State Hospital for the Insane, the State Almshouse, the State Workhouse and House of Correction, the State Prison, the Sockanosset School for boys, which is a reform school, and the Oaklawn School for girls, also a reform school.

The respective relations of the two boards mentioned to all of these institutions are the same practically as their relations to the State Hospital.

The institutions enumerated above are all situated within an area of about one and one-half square miles.

The Board of Control and Supply maintains at Howard a general storehouse. Most staple articles are kept at this storehouse. The State Hospital draws from two days' to a week's supplies from the storehouse, which are charged up to it as drawn. The Board of Control and Supply aims to contract for six months' supplies and for some commodities for a year's supply, the quantities

[1]This is the fifth in a series of eight papers on "The Government of State Hospitals for the Insane." Last month was published "The Purchase of Supplies"; next month will appear "Occupation for Patients in State Hospitals."

contracted for being, according to the judgment of the Board, the total quantities estimated by all the heads of these institutions. It will be observed that there is thus maintained, as it were, a community system.

The Board of Control and Supply employs an officer, designated as disbursing agent. His duty is to receive all the requisitions from the heads of the institutions and to fill them from the general store, if he has the supplies on hand; if not, he forwards the requisitions to the office of the Board at the State House in Providence.

The disbursing agent, or one of his associates, delivers all supplies to the individual institutions and in person checks them off on delivery.

The State Hospital has no officer designated as steward. One reason for this is that the Board of Control and Supply and the disbursing agent perform a considerable part of the work which would naturally, under the usual organization of a large hospital for the insane, fall to such officer. The consequence is that in the organization of this hospital, the superintendent, the dietitian and housekeeper and the superintendent's clerk perform what would naturally remain of the duties of a steward. The dietitian and housekeeper thus becomes an important officer in this organization. This officer is a woman, as is quite obvious from the title. Under the direction of the superintendent she has charge of all domestic supplies after they reach the hospital and she requisitions for the same. She has charge of the service building, kitchen and bakery, of the making of dietaries, of the conduct of the congregate dining hall, of the supplying of foods to such wards as have ward dining rooms, of hiring the domestic help; and, in addition, the general oversight of the laundry.

This hospital has 1,350 patients. Aside from the main hospital plant, there is a building which is a separate unit, known as the reception hospital. This is practically a complete hospital in itself. All incoming patients are received here, there being nearly 400 admissions annually. It has beds for 40 officers and employees, comprising the physicians of the receiving service, the nurses of the same and the domestics for the building. This building has its kitchen, and, with the exception of bread, pastry and such other foods as are baked in the large ovens at the main hospital, the cooking for this unit is done in this building. The domestic work of the reception hospital is in charge of an assistant housekeeper under the dietitian and housekeeper.

### REQUISITIONS

Requisitions for staple articles of food like beans, tea, sugar, flour, are called for by the Board of Control and Supply each six months, or each twelve months, as the board determines.

These are, in fact, estimates, and are made up by the superintendent. Such supplies are usually delivered at the hospital in quantities which will suffice for a month.

There are two other classes of requisitions. These include such articles as it is practicable for the board to purchase on the current market for only a week's or a month's supply.

STATE OF RHOOE ISLAND — BOARD OF CONTROL AND SUPPLY

Date Ordered.....

REQUISITION.

.....

Institutions in Cranston.

Date Wanted ..... No.....

| Quantity. | Article and Description. | To Be Filled at State House. Price. | Total. |
|---|---|---|---|
| ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... |

To be used for..... Writer.....

Approved by ..... Superintendent.

Date delivered..... Date Received.....

..... Storekeeper. Approved by.....

State House Copy. .....Officer.

Such requisitions are presented to the superintendent by the dietitian and housekeeper, weekly or monthly, as the case may be. On approval by the superintendent these requisitions are filed at the hospital in a loose-leaf folder. Copies in triplicate are made of these requisitions by the clerk on a small printed form, one article only on each form. One of these triplicate forms is filed at the hospital, the remaining two are forwarded to the disbursing agent, who retains one and forwards one to the office of the Board of Control and Supply.

### KITCHEN, BAKERY AND CONGREGATE DINING HALL

In the organization of the work in these departments provision is made for the employment of a considerable number of patients. In receiving supplies, in food preparation, in baking and distributing food to the congregate dining hall, and in preparing the food boxes for the wards, there are, besides the dietitian and housekeeper, only eight paid employees at the main hospital, and at the reception hospital, including the assistant housekeeper, three paid employees. There are at the main hospital one cook, one assistant cook, one baker, two serving room men, two serving room women and one meat cutter, who also is the store man. In the kitchens and serving room and con-

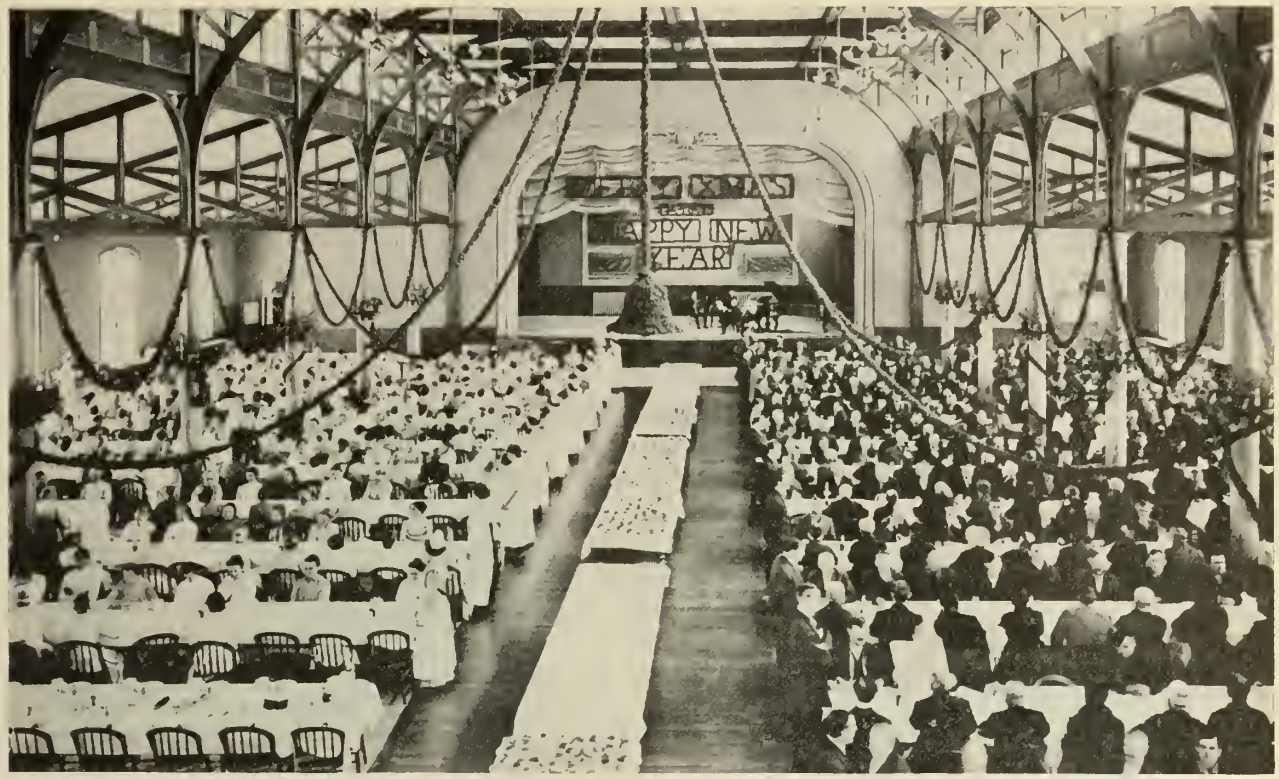

Fig. 1. Congregate dining hall, State Hospital for the Insane, Howard, R. I. Eight hundred people seated.

gregate dining hall, 38 men and 26 women patients are employed. The one baker with the assistance of seven patients does all of the baking for the institution. Each patient or small group of patients has certain routine work to do each day: for instance, the dish washing, the setting up of tables, the distribution of food boxes by means of the food carriages, the picking up of the food refuse from the tables, and so on. The principle adopted is that all work which can be done by patients under supervision shall be so performed, and the paid force is thus kept at the number stated.

### LAUNDRY

I believe that when a superintendent of a large hospital for the insane starts out to build, equip and organize a laundry in his institution, at the first turn he will usually find that the architect has no conception of the space which should be allotted to the laundry; secondly, if he employs an engineer to specify machinery and submit drawings for its arrangement, that the engineer may produce what is probably a very good plan for a commercial laundry, but quite the reverse for a laundry for a state hospital.

The organization of the laundry for such a hospital must take into account the fact that a great part of the work is to be done by patients. Consequently, the relation of the patients to this work must be the determining factor in its planning and equipment. As compared with a commercial laundry, five patients will about equal one paid employee. On this account the laundry building of such a hospital must have ample space. Again, the hours of work for patients should be comparatively short, as compared with the hours of work of employees in a commercial laundry, so that the amount of machinery necessary to do the same amount of work as in a commercial laundry must be nearly doubled for a hospital for the insane. Ample units of machinery to allow a comparatively large number of patients to work, and also to shorten up the laundry working day, must be taken into account.

I believe that the best type of hospital laundry building is that which is of one story and practically upon the ground level. The building should have a basement, as this gives a much better and safer opportunity for steam and water supply and returns, and for conveying electric current, than to carrying these overhead. A laundry of one floor does not require any elevator service. This affords another element of safety.

I believe that such a building for a hospital of 1,500 patients should contain not less than 15,000 square feet of floor surface. An outside dimension of 200 feet by 80 feet gives a very good proportion. The roof should have a monitor running lengthwise of the building nearly the entire length. The monitor should have windows upon the sides which will insure both light and ventilation. Skylights should not be used; they let the light fall disagreeably upon the floor, perhaps where persons are obliged to stand in their work

and at times the heat from skylights is oppressive.

It is well to separate in a building of this size the wet room from the mangling, ironing and sorting room by a brick or cement partition with generous sized sliding door openings between the two rooms. All other partitions should be left out. It is much better in the instance of a hospital for the insane to do without the partitioning off of spaces except for toilets, laundry stores and dressing rooms.

In hospitals with stewards I think that the laundry should be under the direction of the steward, who should engage all of the laundry help.

At this hospital the housekeeper has the charge of the laundry. The paid employees here are one laundryman, one head laundress and three assistant laundresses. The number of patients employed is 17 men and 26 women. Each patient, or small group of patients, has individual work,

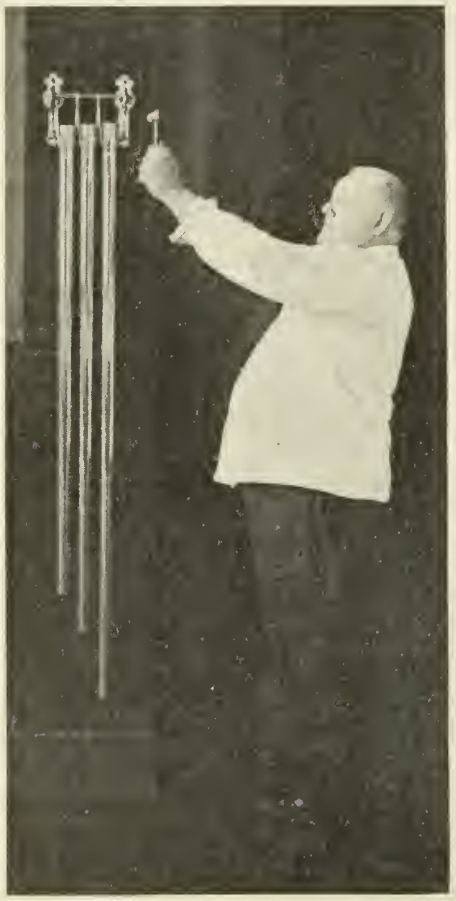

Fig. 2. The playing of tubular chimes is the signal for each of the several steps in the serving of a meal in the congregate dining hall.

the same as described in the kitchens and bakery. Some work on the washers and extractors, a group on the mangles, and a number of women patients on the ironing boards.

A system has been adopted here by which all filthy linen and clothing are placed in "blue bags," so-called from the color; all other soiled articles are placed in bags made of A C A ticking. This insures from the first the separation of filthy articles from the rest.

The sorting of clothing and linen and the prevention of the disappearance of articles in a laundry of a hospital offers a problem which I have not solved. I should be grateful for suggestions on this point.

### SEWING ROOM

As the sewing is done mainly by women patients and is intimately related to the women's

Fig. 3. Distributing butter. By the means shown here butter is distributed to 800 patients in the congregate dining hall in less than three minutes.

wards, this work is under the supervision of the superintendent of nurses. Forty women patients are employed in the sewing room under the immediate charge of the sewing matron and her assistants. Aside from this the sewing matron prepares work which is passed to a supervisor who distributes it to the women's wards, both quiet and disturbed. All material is charged to the ward to which it is delivered and the supervisor collects the finished articles regularly.

We have found that sewing in the wards, especially in the disturbed wards, has given occupation to many patients who are unsuited for and who cannot be induced to take up other work.

### CONGREGATE DINING HALL

In these days of large state hospitals in which the number of patients ranges all the way from 1,000 to 5,000, the distribution of food offers a problem of considerable magnitude. Practically one-third of the cost of conducting large hospitals

is expended in purchasing, preparing and placing food before the patient.

The purchasing and preparation of foods offer the least difficulty. There are economic methods of purchasing and scientific principles of preparation which are positive, a knowledge of which is open to all and the practical application of which requires only the proper attention to details.

It cannot be said, however, that a satisfactory method of placing the prepared foods before the patients of a large hospital has yet been devised.

Fig. 4. Distributing desserts. By means of wire racks, each holding sixteen saucers, desserts are distributed to 800 patients in less than three minutes.

In discussions to which I have been privileged to listen upon this subject it has seemed to me that the majority have condemned the congregate dining hall. It is true that the ward dining room, accommodating only the patients of the ward to which it is attached, or at the most a group of wards with a comparatively small number of patients, has its disadvantages; yet many prefer the small unit, choosing it as the lesser of two evils.

I maintain, however, that the congregate dining hall can be made a pronounced success, both from the managerial standpoint and from that of the patient. What I shall present is based upon personal attention to the subject and an experience extending over several years in the management of a congregate dining hall.

I shall first enunciate three principles, which are the fundamentals of congregate dining hall management. These principles are, (1) to make an appeal to the esthetic sense; (2) to establish efficiency of service, and (3) to derive from the system a therapeutic value. These three principles relate themselves to each other. They form, as it were, a tripod. Remove any one and the whole structure falls.

As the subject is developed in what follows, I hope to make my meaning clear. When I speak of the large congregate dining hall for a State hospital, I mean one which seats five hundred or more patients. I do not feel that it is necessary to fix the maximum limit of a large congregate dining hall, for by the method which I shall describe, the number of patients need be limited only by the proper seating capacity of the hall.

A congregate dining hall properly planned with a seating capacity of anywhere from one thousand to two thousand patients will not present any difficulty, if the system here described is lived up to. Attention must be given, however, to the percentage of the whole number of patients in the hospital who attend the congregate dining hall; and discrimination must be exercised as to the class of patients who attend.

Fig. 5. Perforated boxes in which potatoes are steamed. Each holds potatoes for 32 patients.

From my experience and from information which I have gathered from different sections of this country I believe that about sixty percent of the patients in a large hospital for the insane are capable of taking their meals in a congregate dining hall; by which I mean that there are to be found in most hospitals that percentage of patients sufficiently able-bodied to walk to and from the hall, and sufficiently careful of their dress and personal appearance or capable of becoming so after a little teaching from the nurses; and who are cleanly in habits, not slovenly in their manner of partaking of their food, and not boisterous or offensive in their general conduct. In fact, a proper system is a training for both nurses and patients; the former learn to give greater attention to the personal appearance and habits of their patients, while the latter, although many

are domiciled in so-called disturbed wards, learn good behavior in the dining hall.

In the observance of the three principles which I have mentioned, attention must be given in the first place to the architectural features of the dining hall. I believe that the best result is obtained when the dining hall is a building of one floor, built practically upon the ground level, with basement. This building should be, if possible, at the center of the hospital plant, with serving room, kitchen and bakery attached. It is a prime necessity that the construction and decoration of the hall should be such as to avoid a cold and barren effect. This can be done by breaking up space by supporting columns, brackets or exposed roof timbers. If the brackets and roof supports are of wood, a warm and pleasing effect may be produced by a natural finish and by painting the walls in terra cotta and ceilings in a light buff.

Fig. 6. Removing potato boxes from steam cooker and placing them in tin enveloping receptacle, with cover, which retains the heat. These receptacles are then conveyed to the dining room.

Decoration by means of natural or artificial plants must be added. An orchestra to play during the meals is a *sine qua non* of the system, a stage or platform being provided for this and a gallery for visitors.

We come now to the consideration of efficiency of service. Various devices and utensils are necessary for conveying food from the kitchen and serving room in order that there shall be no unnecessary handling or undue cooling of food before it reaches the patient. The nurses must pay strict attention to the established routine in serving, and see that one act is carried out at a time, and by all at the same time throughout the hall; that the same order of service be carried out each day; that each stage of the meal shall begin and end at the same time throughout the hall; and that there shall be no hurrying.

With these statements I shall try to picture, as well as I can by words, the congregate dining hall at the State Hospital at Howard, Rhode Island, and the progress of a midday meal.

The floor space of that portion of the hall appropriated to the patients' tables is 146 feet by 100 feet. The seating capacity is 896, giving each person a little over 16 square feet. Opening out of one end of the dining hall is the main serving room, and connected with this serving room are the kitchen and bakery. There is a gallery at one end of the hall for visitors. At the opposite end is a stage, where the musicians are seated. This stage is sufficiently ample to accommodate a large chorus of singers or a full band.

The height of the side walls from floor to ceiling is 22 feet. Starting at the ceiling line on the side walls the roof rises, so that at a distance of 25 feet from the side walls the height of the ceiling is 28 feet. On a line 25 feet from the side walls lengthwise of the hall, on each side, are seven supporting columns. Widthwise of the hall the distance between these columns is 50 feet. Extending the whole length of the center of the hall is a monitor roof 50 feet in width. This monitor has in the sides transom windows. The distance from floor to ceiling throughout the space occupied by the monitor is 39 feet. The monitor windows are operated in sections by a worm gear, the hand wheels of which are in reach of a person standing upon the floor. These transoms with the windows of the side walls insure abundant light and ample opportunity for ventilation. Window shades are not used, but the transom windows and the upper sash of the windows in the side walls are glazed with translucent glass. This latter prevents the sun from striking disagreeably upon the tables or faces of the patients.

Extending the whole length of the hall on the side walls is a slate shelf which is warmed by radiators enclosed in grilled boxes under the slate, which serve also for heating the hall (Fig. 7). The slate shelves become sufficiently hot to warm stacks of crockery placed upon them between meals and also to give heat to the boxes of food placed upon them at meal time. The slate shelf is two feet wide and is in fact a serving sideboard.

The patients' tables are 16 feet by 4 feet. The long dimension of the tables extends widthwise of the hall, with a broad center aisle of twelve feet running the length of the hall. The men are seated on one side of this broad aisle, the women

on the other. Each table seats 16 patients. Two tables of 16 patients each, or 32 patients, constitute the unit upon which all the service is based.

The food for each unit of 32 persons is distributed in the food boxes in the kitchen and serving room and these boxes are conveyed on food carriages to the sideboard, just before the patients enter the dining hall. The boxes containing the warm food remain with covers on until the serving begins.

Fig. 7. Potatoes are served onto plates direct from the steam box. This is the only handling of the potato between the steam cooker and the patient's plate.

One rule to be strictly observed is that not a morsel of food is to be placed upon the tables before the patients enter the hall. The only articles upon the tables at this time are cups, saucers, drinking glasses, pepper and salt shakers and vinegar cruets. The plates and all side dishes which are to be used, as well as the bread trays, holding the sliced bread, are upon the sideboards.

Each procedure of serving is announced by the playing of tubular chimes (Fig. 2).

We are now ready to describe the details of serving a meal, we will say a dinner. At 11:45 a. m. a signal is sounded upon the chimes. The orchestra then begins to play and the patients come in at four entrances and take their proper seats. This procedure occupies five minutes. As soon as the patients are all seated the second signal is sounded. This is for the distribution of the knives and forks. One nurse is detailed for each group of 32 patients. The nurse steps to the sideboard and, taking the tray holding knives, forks and spoons, distributes to each patient in the group the requisite number of eating utensils. As soon as this is done, the signal sounds again. On this announcement the nurse turns to the sideboard, removes the covers from the food boxes and begins serving the portions of meat, potato and vegetables upon the plates which are at hand on the sideboard. At the same time two patients from each group of 32 rise from their places and take from the sideboard one plate in each hand as the nurse fills them, and carry them to the patients in the group to which they belong. Thus each patient makes eight trips. These two patients lastly take their own plates with the food placed upon them, resume their seats at the table, and are then free to proceed with their meal. The nurses then pass the bread, distribute the butter chips and fill the cups and glasses. (Fig. 3.) The nurses of each group from that time on attend to the individual wants of the patients in the groups to which they are detailed, giving the patients second helpings, if necessary, keeping the glasses filled, and supplying them with bread.

At the end of 25 minutes (it being now 12:10 p. m.) a signal sounds. On this signal the nurses, with the exception of two supervisors and eight other nurses, retire to their own tables to take their midday meal, the ten persons remaining upon the floor being sufficient to attend to all the wants of the patients.

In the meantime the desserts are being distributed into saucers in the serving room. Sixteen saucers with dessert are placed in a wire rack and when all racks are ready, they are conveyed by food carriages to the dining hall. Two racks, containing altogether 32 desserts, are placed upon the sideboard opposite each group. At 12:30 p. m. a signal is sounded, on which two patients from each group distribute to their group the saucers holding the desserts. (Fig. 4.) At 12:40 p. m. the signal sounds again. This has given the nurses, who retired to the nurses' table for dinner, 30 minutes for their meal. The nurses then return to their groups and on signal pick up the eating utensils and return them in the trays to the sideboard. On obtaining a knife, fork and spoon from each patient in this way, the number of utensils is checked up. At the final signal at 12:45, the patients leave the dining hall. The orchestra has been playing all of this time and one full hour has been consumed.

The accompanying illustrations show some of the utensils and devices employed to produce efficiency of service.

The orchestra should not be too large. From four to six pieces are sufficient. For instance, a piano, a first and second violin, a cornet, a clarinet and a bass viol are ample, even for a very large

hall. The character of the compositions played must be heeded, for the whole scheme may be easily marred. While the patients are entering and leaving the hall and during the distribution and picking up of the silver, lively marches can be played. During the earlier part of the hour loud music is not out of place. But after the main serving has been finished and the patients are all supplied with their food, the music should gradually become more subdued, until towards the end of the meal it should be *pianissimo*. The effect of this subdued music upon the gathering is really quite surprising. I will insert here a sample program which may illustrate what I mean.

PROGRAM

*March:* Dunlap Commandery.....*Hall*
*Distribution of Silver:* Saddle Back Galop.....*Allen*
*During the Meal:* Overture, Magic Flute.....*Mozart*
Spanish Dances No. 1.....*Moszkowski*
Spanish Dances No. 2.....*Moszkowski*
and Sextet from Lucia di Lammermoor.....*Donizetti*
*Collection of Silver:* Saddle Back Galop.....*Allen*
*March:* Liberty Bell.....*Sousa*

If I have made this description clear, I think it will be seen that it is immaterial how many units of patients we have, provided we have the proper arrangement for the care of each unit.

In regard to the size of the unit I will say that it is practical for this to be of 20, 24, 28 or 32 persons. If division into smaller or larger units should be made, a disadvantage would arise. In my opinion a unit should not be less than 20 nor more than 32, because in the first instance the food would be distributed in too small amounts to retain its heat, and in the second instance the food for the units would be too bulky to permit of ease in handling. The smaller the unit, moreover, the larger the number of employees required. I think that a unit of 32 offers the greatest advantage from the standpoint of efficiency and economy.

In the large congregate dining hall certain forms of entertainment may be given, during or immediately after the meal, as singing by soloists or by a chorus. After the supper hour on Sunday evenings, at this hospital, entertainments are frequently given in the dining hall. When the meal is finished, all patients who are seated with their backs to the stage turn their chairs about, and we have thus assembled without extra effort an audience of 800 or more people.

The congregate dining plan, administered in the way described, brings the patients together from their wards to a large, light, airy and attractive hall. An appeal is thus made to the esthetic sense, which in many of our patients is by no means dormant. The patients are given ample time to partake of their meals. The food is served steaming hot. The technic followed results in an efficiency which is totally lacking under the usual method of placing the food on plates already on the table before the patients enter the room. The latter method is fatal to success in conducting a congregate dining hall.

I believe that the lack of a full conception of the principles which I have set forth and the failure to grasp the idea that there must be a strict method in the congregate dining hall are accountable for the general disfavor of the system. When the system is followed as I have described, I believe that the congregate dining room becomes a therapeutic measure of great value, to say nothing of its economical advantages.

Daily weighings of the food refuse left upon the tables after the meals show that the average waste of food for each patient is three ounces per day. The entire work of caring for the congregate dining hall is done by two paid employees. Aside from the duties performed by the nurses in serving the food during the meals, the remainder of the work, which includes the conveying of the food on the food cars, the dish washing, the clearing away and the setting up of the tables, is done entirely by the patients.

### Noted Hospital Worker Gone

Mrs. Cammie R. Howard, a well-known philanthropist and hospital worker of Dallas, Tex., died in that city on July 8, after a long illness.

Mrs. Howard had long been an ardent worker in the interest of the health of the people in her home city, and through her son, Dr. M. M. Carrick, was largely responsible for the State Tuberculosis Sanatorium, and for Woodlawn Hospital for Tuberculosis at Dallas. To the latter institution she left in her will the sum of $25,000.

Mrs. Howard was born in Louisiana in 1853, but had made her home in Dallas since 1890. She left a great host of friends to mourn her death, and her many benefactions will be living, working monuments to her benevolence.

### Health Center in Buffalo

The Philadelphia Health Center plan, which involves the extension of the ordinary activities of the infant welfare station to include intensive work upon all the health problems of a defined area, is to be tried out in Buffalo. The free milk dispensary at 1067 Grant street is to be the center of the work, which is to be in charge of a newly organized Buffalo Federation for the Promotion of Public Health. There will be special standing committees at the center on domestic science, little mothers' leagues, obstetrical clinics, district nursing, medical inspection, food and sanitation, housing, streets and social service. Sanitary Supervisor Clark and Mrs. Carter, of the Public Health Nursing Service of the Department, have assisted in promoting this important organization.

A new twenty-five-bed hospital has been opened at the Illinois Odd Fellows Home, Mattoon, Ill.

# OCCUPATION FOR MENTAL CASES DURING INSTITUTIONAL CARE

## Care and Discrimination Required in Prescribing Work—Proper Occupation Stimulates Orderly Thinking—Work Must Be New and Interesting—Free From Monotony—Small Jobs Should Come First

By CARL W. SAWYER, B. S., M. D., White Oaks Farm, Marion, Ohio

DURING the last few years many ideas have been promulgated for the curing and to aid in the curing of the so-called "insane." One of the latest is the work or occupation cure.

To the casual observer it would seem that what is needed to keep us from going "crazy" and to cure us after we do go "crazy" is work; pure, simple, unadulterated work. And at the present time nearly every institution that cares for mental cases, and every physician who treats mental cases, is lauding in loud terms his occupation courses and advising indiscriminately work of any and all kinds. In fact, one would be tempted to state that our asylums should be turned into factories and our doctors into foremen, were we to believe all that has been written and said on the subject.

Observation and experience with this new form of therapy, however, will soon convince anyone that it is a two-edged sword, capable both of much good and much harm.

After eight years of experience in this branch of therapeutics, I am convinced that it is a measure that must be prescribed as carefully as any other treatment measure. It is neither a panacea or a thing to be used haphazardly. Moreover, it is a procedure with good reason behind it and definite ideas of application, and when it is finally worked out in its entirety we will discover that it bears a very definite place in therapeutics.

The general conception of work therapy is to keep the patient busy. "The devil finds work for idle hands," is the general assumption in prescribing occupation courses. The actual facts in the case are far deeper than this.

Work is really prescribed to create ideas. Most mental cases have either a paucity of ideas, confused ideas, or erroneous ideas. In other words, their manner of thought is poor. Now work, new, interesting work, comes with its freshness and brings new ideas.

Fig. 1. Sawyer Sanatorium, Marion, Ohio—where everybody is busy.

The taking up of the new ideas means a dropping for a time at least of the old ideas; in other words, new nerve fibers are set to work, new cells are brought into activity, new paths of consciousness are developed or uncovered and the patient is lifted out of a mental rut.

In order to stimulate new paths of consciousness the work must be new to the patient. It does not do to put the farmer at farming, the shoemaker at making shoes, the broom maker at making brooms, and the like. The regular treadmill life must be broken up. We must all have a vocation and an avocation. The vocation must make our living and the avocation must make us our health. Work therapy must pass purely as an avocation.

Experience has shown that many business men, many farmers, many women who have done

housework, receive great benefit from basket weaving, lamp making, etc. It is to them a new subject, different from the old grind, admits of individual ideas and creates new paths of thought.

Fig. 2. The sign in the class room.

For fear that it may become monotonous, the form of work should be frequently changed. As soon as the novelty wears away it becomes a drudgery and the results are nil. The first lamp, the first basket, brings big results. The patient feels that he has accomplished something, but the second, third and fourth, unless of entirely different pattern, do less and less good, consequently there must constantly be variety.

There should always be some stimulus for doing the work. Patients can seldom see, until they have recovered, how it is going to help them to do "this foolish thing." They should be urged to make something as good or better than the pattern shown them, something to send to a wife, or a child or the like, and they should always be told when they have accomplished creditable work.

One of the fundamental characteristics of human beings is that they wish to feel that they have accomplished something in the world and that they secure just praise for this accomplishment. A skilful teacher will know when and how to stimulate desires and when and how to give just credit.

As to the choice of work much could be said. Personally, we have tried a number of plans. The Montessori system of teaching deficient children, however, offers the best suggestion. Madame Montessori insists that the children must be allowed to do as they desire; they must only be guided in their selection by suggestion. In her classroom the various teaching paraphernalia are placed on low shelves so that the child can reach them, and the child is permitted to take such articles as he desires to work with. So it is with the mental case. The new patient is permitted to visit the classroom and to choose such lines as he desires. By skilful suggestion the teacher can often determine the choice when none would be made, or change the choice which she knows is not best, but nothing must lead the pupil to feel that he must take a special line.

For this reason it is not possible to sell the work of the educational department by contract. This would necessitate the teacher's having a certain number of a certain kind of articles made, and the likelihood would be that the patients would not choose the articles which the instructor needed to have to finish her contract.

Often the patient, like the deficient child, will choose one thing after another until he has tried all of them. Generally then, he will take up the one that he likes. Should he not do so the instructor should assist in the choice. Really she should make the choice, but she must do so without the patient's feeling that it has been thrust upon him.

As a general rule large pieces of work should not be attempted. Smaller pieces of fancy work, brass work, leather work, basket work and the like, are far better than rug weaving. In an occupation such as rug weaving the patient too often stops in the middle of it, and it is seldom that a new patient desires to finish work that someone else has started.

Fig. 3. Some of the results.

The length of time the patients work varies with their physical condition and their moods. Many weave a few stitches and quit; then return and weave a few more, taking a long time and many hours to complete a small amount of work. Others will keep constantly at their work for hours, and those should be carefully supervised, for under no circumstances should the occupation become fatiguing. The minute weariness appears work should be stopped or changed. New brain conducting paths, reawakened cerebral cells, like new muscle fibers, must not be over-used; they must be trained.

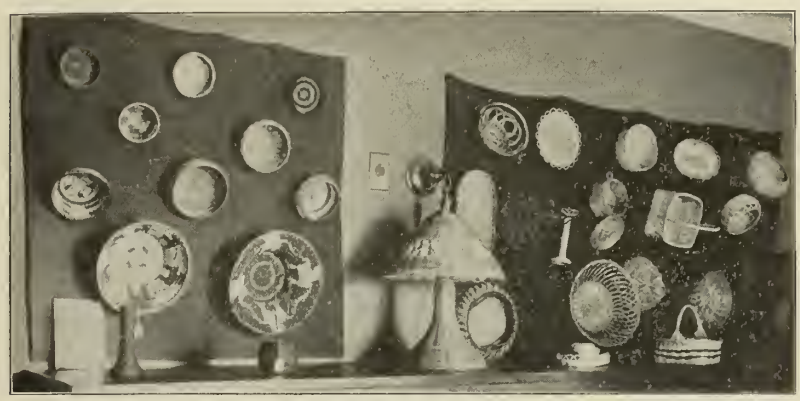

Fig. 4. Specimen baskets in class room.

And, last but not least, in our work therapy, we must realize that its greatest good comes in satisfying those cravings caused by what I term primitive ideas. In fact, the more we follow this line of treatment, the more we feel that in this alone, the reawakening of primitive ideas, lies the principle of its success. For instance, let us illustrate by what is termed the "motherly instinct."

If, as the physiologist and anatomist say, our chief function in this world is to create our kind, then one of the deepest traits we have is to care for our offspring. This is exemplified in the female by motherliness; that is to say, the care of the offspring; and in the male by making a place in the world for the offspring, and in finding its sustenance and in enjoying its successes.

Now take the case of "motherliness." Every woman has the desire for offspring. If she is young she hopes some day to become a mother, to have a baby of her own. If she is middle-aged she desires to care either for her own children or for a child of some other person, and if she is aged she reverts back to the joy of caring for her children in the past.

No matter how disturbed the brain, the mother instinct usually shows in some tangible form. I have seen the most violent and obscene mental individuals make rag babies out of their bed clothes and care for them as tenderly as if they were flesh and blood. And I have seen so-called neurasthenics whose greatest longing was to have children of their own.

It is impossible and in most instances not feasible to give these people real, live babies to work with. But one can, for instance, set them to dressing dolls. Trivial as it may seem, this light and foolish occupation will often help to right a disordered brain because it actually causes the patient to awaken and use submerged channels of thought, which are really great highways of life, actually leading into all the avenues of orderly existence. Or they permit of the expenditure of submerged and pent-up feelings, and by freeing the mind of its incumbrance permit of the awakening of other normal lines of thought; and in this way they act much as the catharsis of Freud in his dream analysis. And that is the real purpose of work therapy, to exercise the mind just as massage exercises the muscles and to create new channels of thought—not simply to amuse patients, fill up their time or to follow the latest fad.

## THE LONDON VOLUNTARY HOSPITALS' BUDGET

### Expenditures Growing at the Rate of $200,000 Annually—Large Addition Sums of Extras

It is estimated that the expenditure of the London voluntary hospitals and dispensaries has been increasing of late years at the rate of about $200,000 a year. In 1911 it was about $6,075,000, in 1912 about $6,275,000, and in 1913 about $6,475,000.

In a recent number of *The Hospital*, London, the above figures are given as covering the "ordinary every-day needs" of the hospitals, and mention is made of "special needs" that add from $1,000,000 to $1,500,000 annually to these estimates. The following table, showing the sources of the income of the London hospitals and dispensaries in the ten years 1904 to 1913 appeared in the same issue:

| Year | From the Living | | From the Dead | | | | |
|---|---|---|---|---|---|---|---|
| | Subscriptions, Donations, Patients' Payments, etc. | Percentage of Total | Investments | Percentage of Total | Legacies | Percentage of Total | Total Income |
| | £ | | £ | | £ | | £ |
| 1904 | 603,425 | 50 | 258,567 | 22 | 319,303 | 28 | 1,181,295 |
| 1905 | 610,130 | 49 | 264,790 | 21 | 373,914 | 30 | 1,248,834 |
| 1906 | 635,377 | 58 | 272,704 | 25 | 186,284 | 17 | 1,094,365 |
| 1907 | 653,320 | 48 | 296,218 | 22 | 407,918 | 30 | 1,357,456 |
| 1908 | 712,461* | 56 | 290,491 | 23 | 265,493 | 21 | 1,268,445 |
| 1909 | 701,458 | 57 | 294,206 | 24 | 240,523 | 19 | 1,236,187 |
| 1910 | 703,841 | 50 | 309,320 | 22 | 394,478 | 28 | 1,407,639 |
| 1911 | 738,622 | 53 | 329,253 | 24 | 322,949 | 23 | 1,390,824 |
| 1912 | 741,439 | 55 | 338,425 | 25 | 272,090 | 20 | 1,351,954 |
| 1913 | 845,908* | 52 | 349,295 | 22 | 424,339 | 26 | 1,619,542 |

*Includes £72,565 and £103,970, the amounts received by the London Hospital in 1908 and 1913, respectively, as the result of its Quinquennial Appeals in those years.

# MEAT EXTRACTS, PROPRIETARY PREPARATIONS AND BEEF, WINE AND IRON[1]

## Original Liebig Formula for Extracts Still the Best—Nutritive and Physiological Value of These Products—Adulterants—Beef, Wine and Iron Delusive as to Value for Food or Medicine

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PAPER IV—PART II

### MEAT JUICES AND ESSENCES

The U. S. standard for meat juice requires that it shall be "the fluid portion of muscle fiber, obtained by pressure or otherwise, and may be concentrated by evaporation at a temperature below the coagulating point of the soluble proteids. The solids contain not more than 15 percent of ash, not more than 2.5 percent of sodium chloride (calculated from the total chlorine present), not more than 4 nor less than 2 percent of phosphoric acid, and not less than 12 percent of nitrogen. The nitrogenous bodies contain not less than 35 percent of coagulable proteids and not more than 40 percent of meat bases."

A true meat juice is in an entirely different category from a meat extract. While the latter contains but small amounts, if any, of coagulable proteins, the process by which a genuine meat juice is prepared requires the presence of considerable quantities of these proteins, thereby giving the juice some real food value. Unfortunately many of the commercial meat juices are entirely unworthy of the name. As the above definition clearly implies, the word "juice" in this connection should apply only to the fluid portion of fresh meat muscle, which is obtained by pressure or diffusion with a very moderate degree of heat. Under heavy pressure from 25 to 40 percent of a thick, red juice may be obtained from freshly chopped meat. The analyses of meat juices prepared in the laboratory of Bigelow and Cook (*Bur. of Chem., U. S. Dept. Agr., Bull. 114*) show that while the method of preparation causes wide variations in the composition of the resultant juices, they are all characterized by a relatively large proportion of coagulable protein nitrogen ranging from 45 to 79 percent of the total nitrogen. A sample made from "juice from beef chuck by cold pressure after 6 hours at 60-100° C." shows very clearly the effect of long heating at high temperatures, no coagulable protein being present.

Table III gives analyses of eight brands of meat juice or essence. It will be noted that the percentage of the total nitrogen which is coagulable ranges from none at all to 38 percent, showing how little the brands listed are entitled in any way to the name "meat juice."

Bovinine is prepared largely from blood (*Chittenden, Medical News*, 58, 716) and contains considerable proteose nitrogen and practically no meat bases; it contains about 8 percent of alcohol by volume. It is a rather common assumption that blood must be a food of high value, but such is not the case. "The misconception proceeds from a neglect of the fact that blood is not in itself the food of the tissues, but is merely the vehicle by means of which nourishment is carried from the intestines to the places where it is wanted in the body." Bovinine is *not* a "concentrated food," as claimed.

Bovox is essentially a fluid meat extract and does *not* contain "a large proportion of nutriment, as well as all of the stimulating salts and in a concentrated form." It contains a large excess of added salt. Brands' Essence is likewise a dilute fluid meat extract, the two samples showing a wide difference in concentration.

Carnine possesses certain characteristics of a meat juice, namely the proportion of insoluble protein, but this it is claimed (*Jour. Amer. Med. Asso.*, Nov. 20, 1909) is due to a small amount of defibrinated blood. Its apparent concentration is deceptive, for, while it contains about 75 percent of solids, 47.5 percent of cane sugar and 14.2 percent of glycerol are present. It is therefore in reality a dilute meat preparation and scarcely entitled to the appellation "meat juice."

Maggi's Bouillon, other than by its misleading name, makes no direct claim that meat has been used in its preparation. It is *not* "a highly concentrated preparation," as claimed, contains much added salt and practically no creatinin and creatin, which are characteristics of meat. It does contain a relatively large proportion of basic nitrogen, which apparently is not derived from meat.

Mason's Essence of Beef claims to be a condensed food made "solely of the juice of the finest fresh beef." The almost complete absence of coagulable nitrogen shows that it is not a true meat juice, and, instead of being concentrated, is a very dilute preparation.

Valentine's Meat Juice has the characteristics of a dilute fluid meat extract, and none of those of meat juice. It contains practically no coagulable protein and has little nutritive value.

Wyeth's Beef Juice resembles a meat juice more than most of the preparations listed, but only 16 percent of its nitrogen is coagulable, less than

[1]This is the second half of the paper on "Meat Extracts." The fifth of this series of articles by Mr. Street will be on the subject "Package Foods" and will be published in September.

## Table III. Analyses of Meat Juices and Essences

| Brand. | Manufacturer. | Alcohol by Volume. | Water and Volatile. | Organic Matter. | Ash. | Chlorin as Sodium Chlorid. | Phosphoric Acid. | Potash. | Acidity = cc $N_{10}$ NaOH per gram. | Nitrogen as: Total. | Insoluble and Coagulable. | Proteoses. | Peptones. | Total Meat Bases. | Creatinin and Creatin. | Xanthin or Purin Bases. | Other Meat Bases. | Ammonia. | Fat. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| [1]Bovinine | The Bovinine Co. | 8.13 | 68.21 | †30.18 | 1.61 | 1.22 | trace | 0.18 | 0.34 | 2.57 | 0.20 | 2.26 | 0.00 | 0.07 | 0.00 | 0.03 | 0.04 | 0.04 | 0.09 |
| [1]Bovox | The Bovox Co. | .... | 51.74 | 30.25 | 18.01 | 14.07 | 0.88 | 1.76 | 1.18 | 4.02 | 0.06 | 1.58 | 1.22 | 1.00 | 0.29 | 0.07 | 0.64 | 0.16 | 0.29 |
| [2]Brand's Essence of Beef | Brand & Co. | .... | 90.93 | 7.73 | 1.34 | 0.09 | 0.48 | .... | 0.98 | 1.28 | 0.03 | 0.60 | 0.18 | 0.43 | 0.11 | 0.01 | 0.31 | 0.04 | 0.51 |
| [3]Carnine | Carnine Co. | .... | 24.80 | *74.34 | 0.86 | 0.09 | 0.33 | .... | .... | 0.96 | 0.36 | 0.41 | | 0.19 | .... | .... | .... | .... | .... |
| [1]Maggi's Bouillon | The Maggi Co. | .... | 49.34 | 29.32 | 21.34 | 18.88 | 1.01 | 1.64 | 2.28 | 2.88 | 0.00 | 0.33 | 0.49 | 1.88 | 0.06 | 0.06 | 1.76 | 0.18 | 0.00 |
| [1]Mason's Essence of Beef | Mason Conc. Food Co. | .... | 88.18 | 10.46 | 1.36 | 0.23 | 0.42 | 0.62 | 0.35 | 1.30 | 0.05 | 0.77 | 0.08 | 0.34 | 0.13 | 0.05 | 0.16 | 0.06 | 0.09 |
| [1]Valentine's Meat Juice | M. S. Valentine. | .... | 55.72 | †32.75 | 11.53 | 1.49 | 2.67 | 5.18 | 4.34 | 3.13 | 0.05 | 0.12 | 0.78 | 1.92 | 0.35 | 0.37 | 1.20 | 0.26 | 0.10 |
| [1]Wyeth's Beef Juice | John Wyeth & Bro. | .... | 53.81 | 29.02 | 17.17 | 7.84 | 3.06 | 4.48 | 4.72 | 3.25 | 0.53 | 0.20 | 0.65 | 1.68 | 0.29 | 0.16 | 1.23 | 0.19 | 0.02 |

[1]Street, Rept. Conn. Expt. Station, 1908, 642, 652.
[2]Bigelow & Cook, U. S. Dept. Agr., Bur. of Chem., Bull. 114.
[3]Propaganda for Reform in Proprietary Medicines, 7th Ed., p. 61.
*Containing 47.50% cane sugar and 14.2% glycerol.
†Glycerol present.

## Table IV. Meat Cubes, Capsules, Etc., and Meat Powders

| Brand. | Manufacturer. | Water. | Organic Matter. | Ash. | Chlorin as Sodium Chlorid. | Phosphoric Acid. | Potash. | Acidity = cc $N_{10}$ NaOH per gram. | Nitrogen as: Total. | Insoluble and Coagulable. | Proteoses. | Peptones. | Total Meat Bases. | Creatinin and Creatin. | Xanthin or Purin Bases. | Other Meat Bases. | Ammonia. | Fat. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Cubes, Capsules, etc.* | | | | | | | | | | | | | | | | | | |
| [2]Ivelcon Cubes | Alpin & Barrett. | 9.25 | 37.10 | 53.65 | 23.93 | .... | .... | .... | 3.00 | 0.13 | 0.97 | | 1.90 | 0.44 | .... | .... | .... | 4.45 |
| [1]Beef Extract and Vegetable Tablets | Armour & Co. | 10.21 | 60.22 | 29.57 | 22.42 | 2.24 | 3.73 | 3.65 | 4.43 | 1.77 | 0.52 | 1.33 | 0.68 | 0.20 | 0.40 | 0.08 | 0.13 | 0.36 |
| [2]Vimbos Cubes | Bovril Limited. | 7.40 | 57.85 | 34.75 | 19.36 | .... | .... | .... | 6.86 | 2.63 | 1.95 | | 2.28 | 0.90 | .... | .... | .... | 1.70 |
| [3]Steero Bouillon Cubes | American Kitchen Products Co. | 6.56 | 28.23 | 65.21 | 59.48 | .... | .... | .... | 3.89 | .... | .... | .... | .... | .... | .... | .... | .... | 1.67 |
| [2]Bovin Cubes | E. S. Burnham Co. | 7.00 | 49.30 | 43.70 | 19.63 | .... | .... | .... | 3.32 | 0.11 | 1.47 | | 1.74 | 0.39 | .... | .... | .... | 2.60 |
| [4]Oxo Bouillon Cubes | Corneille, David & Co. | 4.75 | 27.79 | 67.46 | 62.70 | .... | .... | .... | 3.28 | .... | .... | .... | .... | .... | .... | .... | .... | 3.58 |
| [4]Knorr's Consommé | C. H. Knorr. | 4.32 | 29.17 | 66.51 | 61.46 | .... | .... | .... | 3.18 | .... | .... | .... | .... | .... | .... | .... | .... | 5.43 |
| [1]Mason's Beef Tea Lozenges | Mason-Heublein Co. | 10.82 | 79.50 | 9.68 | 2.24 | 2.70 | 4.03 | 4.77 | *13.04 | 1.10 | ? | ? | 2.16 | 0.91 | 0.50 | 0.75 | 0.14 | 0.06 |
| [1]Anker's Bouillon Capsules | Royal Specialty Co. | 8.61 | 44.30 | 47.09 | 38.38 | 6.12 | 4.90 | 1.90 | 5.54 | 0.21 | 1.12 | 1.97 | 2.00 | 0.66 | 0.27 | 1.07 | 0.24 | 0.07 |
| *Meat Powders.* | | | | | | | | | | | | | | | | | | |
| [1]Somatose | Farbenfabriken of Elberfeld. | 11.19 | 82.72 | 6.09 | 0.03 | 1.47 | 0.13 | 1.50 | 12.64 | 0.05 | 10.60 | 1.59 | 0.26 | trace | 0.04 | 0.22 | 0.14 | 0.09 |
| [1]Mosquera Beef Meal | Mosquera-Julia Food Co. | 12.58 | 82.23 | 5.19 | 0.99 | 1.45 | 2.24 | 2.30 | 12.25 | 6.73 | 0.63 | 3.52 | 1.11 | 0.28 | 0.04 | 0.79 | 0.26 | 8.56 |

[1]Street, Rept. Conn. Expt. Station, 1908, 660.
[2]McGill, Canada Int. Rev. Dept., Bull. 267.
[3]Street, Rept. Conn. Expt. Station, 1911, 162.
[4]Street, Rept. Conn. Expt. Station, 1914, 238.
*Contain much gelatin.

one-half of the required amount, and it contains only 64 percent of the nitrogen of the standard. The claim that it contains "the nutritive albuminous principles in an unaltered and soluble form" is obviously untrue.

### MEAT CUBES, CAPSULES, ETC.

These have considerable vogue at the present time because of their convenience in the hasty preparation of a warm beverage. They consist, as a rule, essentially of meat extract with large quantities of common salt; in some cases much gelatin is present, and at times the meat extract is supplanted wholly or in part by vegetable extracts. Table IV gives analyses of nine brands of such preparations. Mason's Beef Tea Lozenges is the only brand listed which contains important amounts of gelatin. The ash ranges from 9.68 to 67.46 percent, of which from 23 to 93 percent is common salt. Excepting the Mason sample, the nitrogen ranges from 3.00 to 6.86 percent, which is generally of the character usual in a meat extract. Armour's Beef Extract and Vegetable Tablets and the Vimbos Cubes, however, contain a large proportion of insoluble nitrogen, probably due to the vegetable matter or meat fibrin. As a rule these capsules also contain relatively large amounts of fat. Their nutritive value, however, is generally small, their usefulness being in their facility for the rapid preparation of a warm, refreshing, appetizing and mildly stimulating drink. Based on the charge for twelve cubes, one pound of the cubes of one of the best known brands would cost $3.05. The six-tenths of a pound of salt contained in this quantity could be purchased separately for about one cent; the meat extract in them, therefore, costs at the rate of $7.60 per pound. It is apparent that while the cubes may offer many conveniences in their use, they are a very expensive form of food.

### MEAT POWDERS

Only two brands of this character are given in the table. Ordinarily lean meat contains about 25 percent of solid matter; if all of the water were removed the residue would contain about 87 percent of proteins, 8 percent of extractives and 5 percent of ash. This more or less complete removal of water is the practice followed in the preparation of meat powders. In some preparations, however, not only is most of the water removed, but the protein matter is treated with an appropriate ferment and a "predigested" or peptonized product results. Unlike meat extracts, meat powders, if properly prepared, are highly nutritious, and are the only means of securing the full nutritive value of meat in small bulk. Certain authorities have maintained that they are difficult of digestion, but later experiments have controverted this position, and they are now quite generally recommended as being readily digested and assimilated.

Somatose claims to be "an easily digested food made from meat," "a highly concentrated and stimulating meat preparation, containing all the essential food constituents in a soluble and easily digested form;" "it contains the nourishing elements of meat in a readily soluble form, 80 grains of somatose being equivalent to about 1½ ounces of fresh beef (1-8). The salts present correspond to the nutritive salts of fresh meat, among which occurs the phosphate of potassium, so important in the formation of bone and muscle." The analysis indicates that these claims are well founded.

Mosquera Beef Meal claims to be "the only preparation in the market which truly represents all the constituents of prime lean beef, viz., the albuminoids, the fat, the extractive substances and the mineral salts." These claims, allowing for the manufacturer's enthusiasm, likewise are essentially correct. Aside from the resemblance in the amount of total nitrogen, this product is entirely different from Somatose. Over half of its nitrogen is insoluble and its percentage of fat is high; it also contains very much more of the meat bases.

### MISCELLANEOUS MEAT PREPARATIONS

The eleven brands listed in Table V are very diverse preparations, and require no detailed comment. It will be noted that some of them contain alcohol in considerable amount, and in some instances that is probably the only effective ingredient. Most of these products are accompanied by claims typical of the ordinary "patent medicine," and are worthy of no more credence; on the other hand, brands like Malted Meat Extract, Armour's Soluble Beef, Peptonized Beef "Rose" and Leube-Rosenthal's Beef Solution, have distinct nutriment value. Furthermore, certain brands, such as Liquid Peptonoids, contain vegetable matter in considerable quantity.

Pepto-Mangan "Gude" is sold as a medicine rather than a food, "an ideal pharmaceutical combination for chlorosis, anemia, etc." These claims have been disputed by competent authorities, and the writer will not discuss them here. The material contains manganese and iron, probably in the form of peptonates, but the amount of the latter cannot be great, as only 0.16 percent of total nitrogen is present, and three-fourths of this is in the form of ammonia.

Colden's Liquid Beef No. 2 is essentially a dilute meat preparation, with considerable sugar and alcohol, and certain bitter principles. It is in no sense entitled to the word "beef" in its name, as it contains but 0.05 percent of nitrogen. "Its tonic and nutritive qualities are sufficient to sus-

## Table V. Miscellaneous Meat Preparations

| Brand. | Manufacturer. | Alcohol by Weight. | Water and Volatile. | Organic Matter. | Ash. | Chlorin as Sodium Chlorid. | Phosphoric Acid. | Potash. | Acidity = cc $N_{10}$ NaOH per gram. | Nitrogen as | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | Total. | Insoluble and Coagulable. | Proteoses. | Peptones. | Total Meat Bases. | Creatinin and Creatin. | Xanthin or Purin Bases. | Other Meat Bases | Ammonia. | Fat. |
| [2]Malted Meat Extract of Beef | American Malted Meat Co | 0 | 5.72 | 88.65 | 5.63 | 0.40 | 1.43 | .... | 0.39 | 4.12 | 3.23 | 0.50 | 0.00 | 0.39 | trace | 0.04 | 0.35 | 0.00 | 1.95 |
| [1]Liquid Peptonoids | Arlington Chemical Co | 13.05 | 68.43 | 30.66 | 0.91 | 0.36 | 0.12 | 0.18 | 0.30 | 0.83 | 0.00 | 0.27 | 0.31 | 0.20 | 0.05 | 0.00 | 0.15 | 0.05 | 0.06 |
| [1]Armour's Soluble Beef | Armour & Co | 0 | 17.95 | 67.60 | 14.45 | 4.13 | 3.44 | 4.68 | 5.00 | 10.47 | 0.23 | 5.04 | 2.85 | 2.00 | 0.32 | 0.44 | 1.24 | 0.35 | 0.09 |
| [1]Pepto-Mangan "Gude" | M. J. Breitenbach & Co | 13.25 | 81.17 | 17.98 | *0.85 | trace | trace | 0.02 | 0.17 | 0.16 | 0.02 | 0.04 | 0.03 | trace | trace | 0.00 | 0.00 | 0.12 | 0.02 |
| [1]Colden's Liquid Beef No. 2 | Chas. H. Crittenton Co | 16.53 | 68.85 | 30.98 | 0.17 | 0.06 | trace | 0.09 | 0.11 | 0.05 | 0.00 | 0.00 | 0.00 | .... | .... | .... | .... | .... | 0.04 |
| [1]Panopepton | Fairchild Bros. & Foster | 14.19 | 61.82 | 37.04 | 1.14 | 0.53 | 0.18 | 0.33 | 1.08 | 1.12 | 0.00 | 0.29 | 0.43 | 0.36 | 0.09 | 0.03 | 0.24 | 0.04 | 0.00 |
| [2]Essence of Mutton | The London Essence Co | ? | 82.03 | 15.72 | 2.25 | 0.18 | 0.82 | .... | 1.80 | 2.61 | 0.11 | 1.12 | 0.69 | 0.57 | 0.17 | 0.04 | 0.36 | 0.12 | 0.12 |
| [1]Mulford's Predigested Beef | H. K. Mulford Co | 12.52 | 74.30 | 25.32 | 0.38 | 0.43 | 0.02 | 0.10 | 0.80 | 0.50 | 0.00 | 0.13 | 0.18 | 0.19 | 0.04 | 0.03 | 0.12 | 0.00 | 0.00 |
| [1]Murdock's Liquid Food | Murdock Liquid Food Co | 8.60 | 73.53 | 25.75 | 0.72 | 0.31 | 0.04 | 0.14 | 0.28 | 1.98 | 0.39 | 0.00 | 1.18 | 0.28 | 0.00 | 0.00 | 0.28 | 0.13 | 0.30 |
| [2]Peptonized Beef "Rose" | P. B. Rose | ? | 45.13 | 51.35 | 3.52 | 1.63 | 0.43 | .... | 2.31 | 6.98 | 0.22 | 0.83 | 2.50 | 3.17 | 0.07 | 0.10 | 3.00 | 0.26 | 1.11 |
| [2]Leube-Rosenthal's Beef Solution | Ph. Rudisch | ? | 72.68 | 23.41 | 3.91 | 1.84 | 0.60 | .... | 2.82 | 3.13 | 1.58 | 0.49 | 0.51 | 0.43 | 0.08 | 0.01 | 0.34 | 0.12 | 2.48 |

[1]Street, Rept. Conn. Expt. Station, 1908, 642, 652.
[2]Bigelow & Cook, U. S. Dept. of Agr., Bur. of Chem., Bull. 114.
*Contains 0.41 percent $Fe_2O_3$ and 0.16 percent MnO.

## Table VI. Beef, Wine and Iron

| Brand. | Spec. Grav. | Alcohol by Vol. | Extract. | Ash. | Iron (Fe). | Total Nitrogen. | Nitrogen as Ammonia. |
|---|---|---|---|---|---|---|---|
| Made by writer, according to N. F. | 1.0266 | 19.50 | 12.95 | 1.401 | 0.024 | 0.216 | 0.009 |
| E. F. Mattison Co., Providence, R. I. | 1.0197 | 15.19 | 10.01 | 2.157 | 0.122 | 0.223 | 0.014 |
| Wm. S. Merrell Chem. Co., Cincinnati, Ohio | 1.0408 | 19.78 | 16.73 | 0.443 | 0.032 | 0.175 | 0.016 |
| John Wyeth & Bro., Philadelphia | 1.0359 | 20.22 | 15.55 | 1.172 | 0.070 | 0.157 | 0.011 |
| United Drug Co., Boston (Rexall) | 1.0328 | 21.92 | 15.22 | 1.347 | 0.100 | 0.150 | 0.006 |
| American Druggists' Syndicate, New York | 1.0343 | 14.55 | 13.65 | 0.357 | 0.027 | 0.148 | 0.054 |
| American Druggists' Syndicate, New York | 1.0339 | 14.51 | 13.52 | 0.390 | 0.025 | 0.135 | 0.052 |
| North American Remedy Co., Philadelphia | 1.0187 | 17.34 | 10.35 | 0.581 | 0.151 | 0.117 | 0.065 |
| H. K. Wampole & Co., Philadelphia | 1.0400 | 18.69 | 16.23 | 0.623 | 0.088 | 0.099 | 0.032 |
| Hance Bros. & White, Philadelphia | 1.0196 | 17.63 | 10.66 | 0.685 | 0.152 | 0.098 | 0.050 |
| The Harris Co., New York | 1.0252 | 18.65 | 12.38 | 0.421 | 0.036 | 0.079 | 0.011 |
| Irondequoit Wine Co., Rochester, N. Y. | 1.0472 | 17.17 | 17.72 | 0.419 | 0.113 | 0.058 | 0.028 |
| Prudential Drug Co., New York | 1.0568 | 16.44 | 20.05 | 0.365 | 0.029 | 0.040 | 0.003 |
| Fred F. Ingram & Co., Detroit, Mich. | 1.0576 | 16.28 | 20.20 | 1.158 | 0.100 | 0.033 | 0.003 |
| Fred F. Ingram & Co., Detroit, Mich. | 1.0603 | 16.87 | 21.04 | 0.864 | 0.079 | 0.026 | 0.002 |
| *Maxima for 92 brands* | ..... | *25.46* | *24.25* | *2.157* | *0.355* | *0.539* | *0.131* |
| *Minima for 92 brands* | ..... | *8.48* | *6.07* | *0.303* | *0.025* | *0.018* | *0.002* |
| *Average for 92 brands* | ..... | *18.39* | *14.55* | *0.804* | *0.114* | *0.121* | *0.033* |

tain the body without the addition of solid food" is preposterous on its face. Whatever nutriment it contains is due to the saccharine matter and alcohol, not to its trace of nitrogenous matter.

### BEEF, WINE AND IRON

It seems appropriate to discuss this National Formulary preparation in this paper, as the essential part of a properly made Beef, Wine and Iron is meat extract. The Formulary states that the extract of beef suitable for the preparation of this material is that made by Liebig's method. The average druggist apparently does not use an extract of this grade, which accounts in part for the variable composition of the finished product. Likewise the quality of sherry wine used will influence the composition. Furthermore, many pharmacists substitute iron and ammonium citrate for the tincture of citro-chloride of iron, because of its greater solubility, and it is clear that this substitution also changes the amount of iron present in the preparation. While much of the Beef, Wine and Iron on the market is made by the large wholesale drug houses, nearly every druggist puts out a brand under his own name, so that practically there are as many nominally different brands as there are druggists. A long series of analyses, therefore, would be of little value except to the localities where the druggist does business. The following table, therefore, gives the analyses only of such brands as have other than a local use, a preparation made by the writer in his laboratory according to the prescribed formula, and the maxima, minima and average of 92 samples analyzed by the writer in 1908.

The tabulated analyses reveal the fact that save in a very few instances Beef, Wine and Iron is simply an alcoholic beverage with all the advantages and disadvantages of a preparation of that character. The alcohol ranged from 8.48 to 25.46 percent, the latter being about half the strength of standard whiskey. The extract (solids) ranged from 6.07 to 24.25 percent; this consists of the solids of the meat extract (when any is used), the syrup and the wine. Ten percent would seem to be the minimum amount permissible in a well-made preparation. The ash varied from 0.303 to 2.157 percent; in a properly made product this should range between 1.00 and 1.25 percent. A high ash generally indicates that the meat extract used contained excessive salt, while a low ash signifies that too little meat extract was present. Iron ranged from 0.025 to 0355 percent. The amount of iron present depends, of course, on whether the tincture or citrate of iron was used. The writer has shown (*Rept. Conn. Expt. Station*, 1908, 674) that where the tincture is used and the Formulary directions are strictly followed, 91 per cent of the added iron will be lost during the preparation of the Beef, Wine and Iron. The use of the citrate of iron and ammonia would undoubtedly secure a product better in every respect. The nitrogen varied from 0.018 to 0.539 percent. Just as in the case of iron, the final filtration required in making the preparation removes a large part of the nitrogen, so that a low nitrogen percentage does not necessarily indicate that insufficient meat extract was used. However, no possible manipulation of the formula, provided meat extract of good quality is used, could give a nitrogen content of less than 0.15 percent in the finished product. The percentage of ammonia, which in the writer's analyses ranged from 0.002 to 0.131 percent, depends largely upon the iron salt used, the citrate naturally giving a higher ammonia percentage. In judging the nutritive value of Beef, Wine and Iron it must be kept in mind that a large part of the nitrogen present may be due to the citrate of iron and ammonia and not to the meat extract; in the writer's analyses this averages 34 percent of the total nitrogen.

It is difficult to understand why a preparation of such doubtful efficacy should have been admitted into the National Formulary. For all practical purposes it is generally a poor grade of sherry wine to which have been added small quantities of meat extract and either tincture or citrate of iron. When one remembers how little nutritive value meat extracts possess, the small amount of this material used in the manufacture of Beef, Wine and Iron certainly cannot give that product much value as a nutrient or even as a tonic or stimulant. In certain cases the iron present doubtless might be of value as a tonic during convalescence or in certain blood disorders, but it could be obtained much more cheaply and could be used much more accurately and intelligently in other forms and under a physician's directions.

The claims made for Beef, Wine and Iron by the manufacturers are absurdly exaggerated. Two brands claimed that "one-half fluid ounce contains the strength of one ounce of beef." The strength of beef is its nitrogen, and one ounce of fresh, lean beef contains about 16.3 grains of nitrogen; these samples contained from 0.06 to 0.38 grains of nitrogen per ounce. Two brands claimed that "each fluid ounce contains one ounce of essence of beef"; if this were true the material would be essence of beef, not Beef, Wine and Iron. One brand claimed that "one tablespoonful contains the equivalent of 1½ ounces of lean meat"; this is untrue, as one tablespoonful contains only 0.17 grain of nitrogen, instead of the 25 grains claimed. Examples of such absurd and dishonest claims might be given almost indefinitely.

Speaking of medicated wines in general, Hutch-

inson states (*Food and the Principles of Dietetics*, 1906, 383): "The use of these wines can on no ground be recommended. In the first place, they are not worth the price charged for them, for it is far cheaper, and also better, for the invalid to get beef or malt extract separately and take, along with them, if need be, a definite quantity of sound wine of known antecedents. . . . The use of such liquors by an invalid on his own responsibility, or even by prescription, exposes him to great danger of becoming by degrees the unconscious victim of alcoholism."

## THE KING'S DAUGHTERS' HOSPITAL AT PORTSMOUTH, VIRGINIA

### From Small Beginning in an Old Residence New Structure Costing $110,000 Was Erected—Accommodations for Negroes Happily Arranged

By FLORENCE E. LESLIE, R. N., Superintendent

THE King's Daughters' Hospital stands as a monument to the generosity of the people of Portsmouth and vicinity. It was for the public, who so freely gave, that this institution was erected. Individual subscriptions were solicited through the medium of a "seven-day campaign," conducted by the board of directors. The amount raised by this method, together with $15,000 donated by the city of Portsmouth, made this institution possible.

The King's Daughters' Hospital was established in 1897 in a very modest way. Some charitable people, realizing the demands of a growing city, came to the definite conclusion that an institution for the care of the sick would be a great benefit to its people. This fact was further augmented by rather a singular coincidence. A stranger was suddenly taken ill in this city; his case was urgent, and he needed hospital attention. There being no hospital, he had to be taken into a private home by one of the charitable and benevolent ladies who later helped found this institution.

As an outgrowth of this case, and the result of conferences and meetings, the King's Daughters' Circle took up this great work. They put into effect the thoughts, dreams and aspirations of those who formerly dreamed of such an institution. To these ladies and gentlemen we owe much.

Fig. 1. King's Daughters' Hospital, Portsmouth, W. Va.

A small building was first acquired, and in this humble way the establishment of this institution became a fact. In a remarkably short time the hospital outgrew its quarters. Its directors and managers, flushed with the pride of a deed well begun, immediately sought larger quarters, and after much deliberation they bought a house that would allow them greater accommodation. Again, after a short while, the same condition arose that formerly existed; consequently additions were made to the building and accommodations for about twenty more patients were provided. This building, with its additions, sufficed only for a comparatively short period of time. The hospital was now thoroughly established; its work was commended by the public, the city and the medical profession.

At last the point was reached where patients had to be refused admission on account of lack of room. This was annoying to the hospital authorities as well as to the physicians. These conditions lasted for a period of two or three years, during which there were evolved schemes and plans for the erection of a modern, up-to-date, fireproof structure with ample accommodation for a larger number of patients. Upon the part of a few there was a disposition to go ahead; others said the plan was impossible, for there was always this one sobering question to be answered fairly and squarely: "Where is the money coming from?" The hospital had then no endowment fund, nor has it ever had.

Fig. 2. King's Daughters' Hospital. One of the wards.

Finally a scheme was uncovered whereby an appeal should be made to the people of Portsmouth (which city has a population of 50,000) to give and help raise the money. As a result of this the people were asked for money and they gave, erecting thereby a permanent institution.

DESCRIPTION OF THE BUILDING

Facing due south, the structure stands one hundred feet from the building line. This will allow, in the future, the erection of two wings running at right angles with the main building and forming a very beautiful court. At present a circular driveway, with spacious lawns, forms the approach.

The building is three stories high above a lofty basement. Two separate buildings go to make up the hospital. The larger or main building is connected by a covered passageway to the smaller annex. The main building contains all accommodations for white patients.

The smaller building, which is just behind the larger one, contains accommodations for colored patients, with nurses' quarters on the second floor.

Rough-textured brick and gray stone trimmings have been used to stand the sea air which sweeps over and about the building.

The basement floor of the main building is large and spacious. A large part of this floor is occupied by the culinary department. The laundry is also on this floor. The staff dining room, nurses' dining room, nurses' lecture room, laboratory, clothes room, x-ray room and morgue are also on this floor. The entire southern end of this floor is occupied by the engineering department, which is composed of two large low-pressure boilers and one large high-pressure boiler, the former furnishing heat for the building, the latter steam for the sterilizing room, and hot water. There are also six or seven rooms on this floor that are for servants; also there are necessary bath rooms and lavatories. There is plenty of light in the basement for all purposes.

The first floor of the main building is devoted to the executive department and the white male and female wards. These wards, two in number, flank each end of the building, and consequently are light and airy. Each ward is 22x45 feet and accommodates fourteen patients without crowding. Adjoining each are the necessary work rooms, such as bath, toilet, chart and dressing rooms. Adjoining each ward is also a room designated the "quiet room," to which the patient is transferred when he is *in extremis*. A large door leads to a porch which spans the width of the main building. This porch runs three stories and is connected by a steel stairway.

The first floor of the smaller building is devoted exclusively to colored patients. Here we have the same general arrangement as on the first floor of the larger building. The wards, two in number, although not quite as large as the white wards,

provide ample accommodation for twenty-four patients. They also have the necessary work rooms, such as nurses' office, chart room, dressing rooms, bedpan rooms, etc. Also on this floor there are two private rooms for colored patients.

The second floor of the main building is devoted exclusively to private rooms, of which there are sixteen, averaging 10x14 feet in size. The superintendent also has her quarters on this floor, her apartment consisting of a bed room, bath room and sitting room. A long eight-foot corridor runs parallel with the long axis of the building and is flanked at each end by two large porches. Four of the rooms on this floor have private baths.

The third floor is devoted to the operating rooms, of which there are two, as well as sterilizing rooms, wash room, supply closets, doctors' shower, etc. The entire west end of this floor is known as the surgical pavilion. The east end of this floor is devoted to the lying-in department. It consists of a delivery room, a small ward, a special room for bathing the new-born, and a nurses' office. There are also located on this floor seven private rooms. Additional rooms, such as bath, bedpan and blanket, and diet kitchen are also on this floor.

The second floor of the annex is used as the nurses' dormitory. It contains private rooms for senior nurses and a large ward for junior nurses, together with toilet, bath, etc. An electric elevator runs from the basement to the top floor. Electric signal lights are used, with which each room is provided.

The hospital is fireproof, the construction being of reinforced concrete. In the wards and private rooms a thin veneering of flooring has been laid; this, together with the doors, door frames and window frames, composes all the inflammable material in the building. The floors of all corridors are tiled.

All doors are wide enough to permit the passage of a bed, and all door sills are eliminated. The floors of all rooms, wards, corridors and porches are flush. This arrangement allows the sickest patient to be transferred to the spacious porches without the slightest jar or confusion, as all the beds are equipped with five-inch rubber-tired wheels.

Electric lights (the inverted system) and gas fixtures are plentifully distributed for ample lighting. A dumbwaiter runs from the main kitchen to the top floor.

The building, together with the equipment, cost $110,000.00. The architect was Mr. B. F. Mitchell, of Norfolk, Va. This hospital not only stands as a monument to its donors, but also as a memorial to the painstaking zeal and persistent interest that has been so graciously manifested by one of the physicians of Portsmouth, Dr. C. H. Barlow, who, during the course of its erection, very carefully and cautiously watched its development from crude brick, mortar, steel and other constituents into a completed building. His interest at this point spurred him to further action, and his aid in the selection of equipment was offered and gratefully received. Too much credit cannot be given Dr. Barlow for his valuable aid.

The members of the board of directors were also very faithful in the performance of their additional duties during the construction period. As the result of this supervision, we have a hospital of which we are proud, and we consider that our efforts have been magnificently productive.

Fig. 3. King's Daughters' Hospital. The operating room.

Architects Kennerly and Stiegemeyer, St. Louis, are drawing plans for a $15,000 hospital to be erected at Paris, Ill., for Dr. Roland Hazen. Dr. Hazen has conducted a private hospital at Paris for several years.

The aggregate mortality in London during the month of March from the principal infectious diseases, excluding diarrhea, was nearly 97 percent above the average.

A "tucked sheet," to obviate the possibility of accidental turning and thus transfer to the bedding what it should carry to the laundry for removal, is being placed on the market in England, for hospital use.

The Governor of Arkansas recently appointed a committee to make a wide inquiry by questionnaire and to follow this up by an intensive canvass of certain sections for the purpose of obtaining information regarding conditions and needs of the feeble-minded of that state. There are at present more than 100 feeble-minded in the State Hospital for Insane, and it is hoped that the report of this committee, followed by a publicity campaign, may result in legislation authorizing an institution for this class of mental defectives.

The MODERN HOSPITAL

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Contributors, subscribers, and readers will find important information on advertising page 34.

## The Small Community Hospital

Every person in this day of good hospitals and good doctors is entitled to good care and the best treatment during sickness, and to wise counsel and guidance to help him keep well.

There are approximately 7,000 hospitals in the United States, and nearly 100,000 doctors are on hospital staffs. Most populous communities are pretty well provided with hospital facilities, and their doctors are provided with workshops wherein they may acquire the necessary experience to enable them to serve the sick well.

But there are many rural communities that have no hospitals, communities small as to population, and so scattered that there seems a lack of cooperation and community spirit. Sometimes the leaders in these communities dismiss the matter of lack of hospitals with the statement that there is a hospital at "B," only 50 miles or so away, and that trains run frequently. They think they have the solution of the problem—but they haven't.

It is not alone necessary to have a hospital to which one may go when sick; it is also necessary to have a doctor who is abreast of the times, who is informed on modern medical methods and practices. If there is no hospital, where is the stimulus for a local doctor to study and work along scientific lines? The best of workmen will only "tinker" if his workshop is at home in the basement; it is when he has the tools and the shop, and the stimulus of association with other workmen in the same trade that he can do good work.

Will not the same principle hold true with the doctor? Will not his experience be greater, his opportunities broader, if he has a well equipped workshop? And will his results not be far better? There is nothing that will so stimulate a doctor to study and plan, to keep up in his literature, to keep abreast of what other men out in the broad world—his world—are doing, as constant association with his coworkers in a well equipped hospital.

Suppose there is a good hospital fifty miles away! What good will that hospital do if your wife or child is taken with a sudden illness that will not admit of the delay of an hour? Something must be done *now*, and if you have been in the habit of sending your patients fifty miles away to other doctors, who has acquired sufficient experience to do the necessary thing now, in this emergency? And who is there who shall be free from danger of such an emergency?

Every community of 3,000 or 4,000, living within a radius of ten miles, can support a hospital sufficient for every need. Such a hospital need not be costly in construction or in equipment—the simpler the better. If nothing better offers, rent or lease an old residence or unused store or factory; a small amount of money will put it in good order for a small hospital; $200 per bed will equip it—$2,000 for 10 beds. Most of the patients will be able to pay their way, and if the community is not a very poor one, the hospital will be self-supporting from the start. The county or town will usually pay a reasonable amount for the care of dependents whom the hospital is obliged to care for. The doctors will treat the poor without a fee.

Small towns and rural communities that have no hospital had better think about one.

## Institution Libraries

At the instance of a few very wide-awake institution librarians the American Library Association has appointed a committee to form a special branch of its activities. The announcement is published elsewhere in this number.

Even very small hospitals, "homes," prisons, jails and similar institutions can and should participate in this library movement. There is no recreation so comforting, diverting and elevating to people obliged to remain idle as good reading, and even those too sick or unable to concentrate their minds on printed matter will always appreciate illustrations and pictures.

And it costs so little to accumulate a good library. Let it be known in the community that a hospital or prison can make good use of books, current magazines and any other literature, and it is surprising how many volumes will be offered. Not alone do patients and inmates appreciate a library; the nurses and attendants and the resident doctors appreciate it. It has often happened that the visiting medical staff, when the members are informed of the wish of the hospital to start a library, will offer good text books, and sometimes the medical men will give their whole libraries to their hospital under such a stimulus. And many valuable supporters have been attached by arousing their interest in the institution when they are permitted to offer their surplus books and magazines.

But it is not enough that the institution shall receive library material; there must be someone whose duty it is to index, classify and keep the library in order. The average person in institutions cannot do this unaided; the duty requires some help and some special training.

It is the purpose of this new committee of the American Library Association to stimulate interest in this work and to help untrained persons to do this work in a proper manner.

Hospitals should appoint a librarian, even though they have no library, and place the new appointee in communication with this committee, so he or she can know just how to begin the work.

### Is Nursing a Profession or a Trade?

On another page of this number will be found a letter from the Acting Commissioner of Labor concerning the admission of training school pupils and graduate nurses from Canada.

It is the purpose at this time to call attention only to the last three lines of the commissioner's letter, namely, that "Nurses are not specifically mentioned in the exception, and the Department has held that nurses do not belong to a *recognized* learned profession."

For years the writer of this editorial has warned the leaders in the nursing world that they were heading their high calling toward a maelstrom of labor unionism. He called special attention to the California eight-hour law as proposed to affect nurses, and urged that this act was the parting of the ways between professionalism and union labor, and that the enactment of this law would cost the nursing profession years of woe and the hardest kind of work on the part of its best friends to undo the evil.

No one can possibly doubt the high purpose of such women as Miss Nutting, Miss Goodrich, Miss Maxwell, Miss Parsons, Miss Lawton, Miss Noyes, Miss Cooke and their colaborers, but one may seriously doubt the wisdom of their insistence that the nursing profession shall be classed with union labor as to fixed hours, fixed wages—indiscriminately for the efficient and the inefficient, and at the same time retain the high position they demand for the profession alongside the other "learned professions."

The writer of this editorial warned the leaders in the nursing profession against the folly of the California law and attempts to enact similar laws in other states, and in an editorial at the time prophesied that the time would come when the medical profession and the other friends of the nursing profession would have to join all their energies to undo the wrong.

That time is now come, and it becomes the duty of all of us to put our shoulders to the wheel and help lift the nursing profession out of the ruck in which it finds itself, and again set it upon the high plane of a "recognized learned profession."

The first thing to do is to ask for a reopening of the case before the Department of Labor, present our evidence that nursing is a "learned profession," and make our fight. The next thing is to clear our skirts of all the evidences of labor unionism by striking off our lists of demands, all reference to fixed hours, regardless of conditions, and fixed, arbitrary wages for graduate nurses without reference to their efficiency. When we have done these things there is no doubt that nursing will really be again one of the "learned professions."

### The Death of Mrs. Allen

Only last month we had something to say in these columns about the "honor farm" and the inauguration of a new era in prison administration by Warden Edmund M. Allen, of the Joliet, Illinois, penitentiary.

It is with great humiliation, disappointment and sorrow that we are now obliged to announce the death by murder of Mrs. Allen, the devoted wife of the warden.

At six o'clock on Sunday morning, June 20th, Mrs. Allen was found dead in her room with a crushed skull. The apartment had been set on fire, and it was the smoke of the fire that called the attention of the officers on duty to the room occupied by Mrs. Allen. She was dead, and her body, lying on the bed, was badly burned. A negro "trusty" is under arrest.

It was Mrs. Allen who inspired the inauguration of the "honor farm;" it was she who safeguarded the movement from harm when arguments against the plan were almost overpowering it; it

was she who, by subtle, humane and unselfish ministrations, brought the prisoners to cooperate in the "honor" era; and since the "honor farm" became a fact Mrs. Allen had become its patron—let us say, its patron saint.

When it became known in the prison that Mrs. Allen had been murdered the prisoners rose in revolt—not against constituted authority, not against the warden, as is so often the case, but against the fiend who had murdered their friend and benefactor; and if those men, hardened as they are by lives of crime, had been able to get hold of the murderer, his shrift would have been short. As it was, they got up a most pathetic letter to the warden, assuring him of their sympathy and their participation in his bereavement, and attesting to their firm conviction that the blow which it has been dealt had not hurt the "honor" principle, but had strengthened it more than any other one thing could have done.

Mrs. Allen is gone; her work is done; the "honor" system in prison administration has been baptized in the blood of its martyr. We sympathize with the warden in his great loss; but it is seldom given to a human being to be of such great service to such a great cause, and there are many who would envy that noble woman in being permitted to die that a great cause might be set upon an imperishable footing and take its place among the memorable achievements of our humanitarian age. She did not die in vain.

### Fire Prevention in Hospitals

More than once have we had occasion to prod hospital boards and administrators about fire protection in their institutions.

Recently, a strange reason was given by a trustee for the carelessness and callousness with which an almost criminal fire hazard was permitted to continue.

"Our hospital is a fire trap," cheerfully admitted this gentleman, "and we are consequently very watchful to see that the exits are all maintained in good order; our drill consists in the practice of emptying the hospital, so that if need be, we can get patients out quickly and safely. We can't hope to make the institution fireproof, so what is the use of deceiving ourselves into a false sense of security?"

"Do you practice getting your very sick bed patients out during these drills?" the trustee was asked.

"Oh, no; but we use nurses, interns, maids and other well people for the purpose, to go through the drill; we place them on cots and stretchers and 'make believe' they are bed patients."

It was learned from another source in this same hospital that the "fire drill" was "great fun," and that only the most agile of the hospital family could come safely through the experience of representing a "bed patient" at these periodic athletic exercises. That kind of thing isn't a fire drill; it is mere "horse play" for the young folks.

Fire drill should presuppose the breaking out of a small fire; and the first thought of all in its neighborhood should be directed toward getting it out before it obtained a harmful headway. At this stage, some of the people should be drilled to man the hand grenades, the chemical apparatus and the hose. Others should be drilled to man the wards and private rooms to see that patients are given the necessary assurances so that they will not become panic stricken. Still others should be drilled to get ready the stretchers and carts for the removal of patients, to see that the elevator, stairs, and fire escapes are clear and ready for instant and effective service. It should be the specific duty of some one to notify the fire department or turn in an alarm.

The main thing in a fire drill is to have every well person in the house "on the job," each one with some definite part to play, and to have the whole performance so well rehearsed that, no matter how great the emergency and the necessity for haste, each person will go to his or her duty instantly and without excitement, and do his and her part.

It must be well understood that, no matter how many fire contingencies may have been anticipated, when fire breaks out it will be altogether different from what was expected.

Perhaps the most important service of the drill is to teach the people to act calmly, without excitement, and to use their heads quickly.

The first recorded ambulance service of history belonged to the Hospital of the Holy Spirit, founded in Rome by Pope Innocent III in 1198 A. D. To quote from the Latin description: "There belong to the hospital certain coaches and litters for sick persons, wherein they are carried up and down in places of more wholesome air than the city, and in which the sick may be brought to the hospital when wasting away in languishing fevers."

The first segregation of lunatics into wards was at Hotel Dieu in Paris in 656 A. D. There were two wards set aside for the insane, one for women and one for men. In these wards there were only four beds, which were large enough to accommodate five persons, and an open fire was kept burning in the rooms day and night. It was the custom of the other patients in the hospital to spend long hours watching the "antics of these madmen, which served to relieve their minds of their own grievous infirmities, causing them to laugh and shout with amusement."

## REPORTS OF HOSPITAL ASSOCIATION MEETINGS

### Seventeenth Annual Conference of American Hospital Association—First Annual Convention of Catholic Hospital Association—Section on Hospitals of American Medical Association—Some of the Papers Read

#### American Hospital Association Meeting

Nearly three hundred hospital people were in attendance when Dr. H. T. Summersgill, chairman of the executive committee, called the meeting to order for the seventeenth annual conference of the American Hospital Association in the assembly hall of the Inside Inn, in the Exposition grounds, San Francisco, at 9:00 o'clock in the morning, June 22. A large part of the attendance represented Pacific Coast hospitals, and a comparatively small part were from the eastern and central west institutions.

The executive committee, made up of local hospital people, had made very pleasant arrangements for the convention, the hall was large and roomy, well lighted and well ventilated, and Miss Lydia Keller, who was so untiring in her preparations for the St. Paul Convention, had decorated the hall and had installed in the back part of it her noncommercial exhibit. The usual distracting noises that have interrupted the proceedings of so many conventions heretofore were not present at San Francisco, and the managers of the Inside Inn had used their best efforts to give the association pleasant surroundings and an opportunity for good meetings.

Most of the visitors to the convention were guests of the Inside Inn, so that the association was well concentrated personally and as a body.

There were too many distractions to allow the convention to proceed in anything like a calm manner. There were being held at the same time, in different parts of the city, the convention of the American Medical Association and the sessions of all its sections, and the convention of the three nursing associations. Beside that, the exposition was at its height, and people were in attendance from all parts of the world.

There were many exhibits in the exposition proper that were calculated to appeal to the hospital people, that, for instance, of the Public Health Service of the government, which was in reality a hospital exhibit and, under the direction of Colonel Woodward, presented many objects that the hospital people would want to know about. There was an exhibit of mine rescue apparatus made by the Western Electric Co. that attracted great attention because of its hospital angle. In the Japanese exhibit there were many objects concerning the public health, as there were also objects of similar kinds in the buildings of some of the European countries, notably Italy and Spain and France.

Tuesday morning's meeting lost no time in getting under way. The first speaker was the secretary of the mayor, who welcomed the convention to San Francisco and gave a most interesting talk on some of the health activities of that city. He dwelt particularly on the several emergency hospitals with their ambulance staffs of physicians and orderlies, and spoke of the connection of those emergency hospitals with the new San Francisco hospital.

Dr. Summersgill, chairman of the executive committee, read the president's address, in which he paid a fine tribute to Dr. Mann, and at the end of it a committee was appointed to draw up resolutions expressing the grief of the association at Dr. Mann's death, and the sympathy of its members with his bereaved family. Dr. John W. Peters, who had been a lifelong friend of Dr. Mann, was made chairman of this committee, and it was the intention to prepare engrossed resolutions, one copy to be sent to the Massachusetts Homeopathic Hospital and another copy to Dr. Mann's family.

A notable feature of the convention was that for the first time a woman presided over its deliberations during a part of the sessions, the woman in this case being Miss Ida M. Barrett, third vice-president.

The convention was notable, as a whole, for the fact that the program, as prearranged by Dr. Mann, was almost exactly carried out, there being almost no absentees among the members on the program. The spirit of the papers read was stimulated many times and raised to a point of marked enthusiasm by brisk discussion, participated in by many who heretofore have not taken part in the association's activities.

Philadelphia was chosen as the next meeting place of the association, and the Nominating Committee handed down the following officers, who were unanimously chosen for the coming year: President, Dr. Winford H. Smith, Baltimore; First Vice-President, Dr. C. D. Wilkins, New Orleans; Second Vice-President, Miss Nettie B. Jordan, Aurora, Ill.; Third Vice-President, Dr. A. R. Warner, Cleveland; Secretary, Miss Lydia Keller, Northfield, Minn.; Treasurer, Mr. Asa Bacon, Chicago.

The time of the next convention was not set, and power

**OFFICERS OF THE AMERICAN HOSPITAL ASSOCIATION FOR 1915–1916**

PRESIDENT,
DR. WINFORD H. SMITH,
Superintendent Johns Hopkins Hospital,
Baltimore, Md.

FIRST VICE-PRESIDENT,
DR. C. D. WILKINS,
Superintendent Charity Hospital,
New Orleans, La.

SECOND VICE-PRESIDENT,
MISS NETTIE B. JORDAN,
Superintendent Aurora General Hospital,
Aurora, Ill.

THIRD VICE-PRESIDENT,
DR. A. R. WARNER,
Superintendent Lakeside Hospital,
Cleveland, Ohio.

SECRETARY,
MISS LYDIA KELLER,
Northfield, Minn.

TREASURER,
MR. ASA BACON,
Superintendent Presbyterian Hospital,
Chicago, Ill.

was given to the incoming president and his executive committee to fix the time, it being the intent to avoid, as much as possible, conflicting dates and other conventions in which the hospital people might be interested.

During the convention, the question of a number of amendments to the constitution came up, and the report of the committee, advocating changes, was postponed until the Philadelphia meeting; it was the feeling that the members present had not given the subject of changes in the constitution enough consideration, and that since there was no hurry, and since it was felt that changes in the constitution should be made after very careful study, the matter might be left for a future date.

Some significant resolutions were adopted by the convention, one recommending to the incoming president that his executive committee be chosen from the country at large and representing the several hospital interests rather than, as heretofore, from among the hospital people in the convention city.

Another resolution was adopted, recommending to the incoming president the appointment of an entertainment committee from among the hospital people in the convention city, this committee to work under the direction of the president and his executive committee. A third resolution gave power to the incoming president and the executive committee to change the time and meeting place of the next convention if at any time during the year the fact developed that adequate arrangements for the entertainment of the convention were not being made by the city chosen for the convention. This resolution was passed before Philadelphia was chosen, so that there could not have been any personal reflection. The convention felt that for the past few years the cities chosen for its meeting place had not made the best possible arrangements for the entertainment of those in attendance. There was a definite feeling pervading the convention at San Francisco that the meetings need not be all business, but that there should be an element of entertainment so that a spirit of camaraderie could be engendered and so that those in attendance could obtain more from attending the convention by personal contact with others in the same line of work.

Still another resolution that was adopted recommended to the president the creation of a commercial exhibit for the next meeting and appropriated a fund of $500 with which to get up such an exhibit. The members felt that a properly created and conducted commercial exhibit could be made one of the best features of the association. Those in attendance felt that one of their missions in attending the meetings of the American Hospital Association was to see new things and to be permitted to talk about them with their associates in hospital work, to compare notes on the use of certain products offered for sale for use in hospitals. The members felt that hospital superintendents make up the actual purchasing power for the hospitals of the country and that any commercial exhibit of hospital supplies must of necessity be of greater interest to them than anyone else. For that reason, the desire was expressed to have an adequate commercial exhibit for the next year.

DR. WINFORD H. SMITH,
PRESIDENT AMERICAN HOSPITAL ASSOCIATION.
Superintendent of Johns Hopkins Hospital, Baltimore, Md.

Taking it all in all, the convention was very successful, considering the distance that must be traveled by most of the members. The expenses of the trip to San Francisco for eastern people and those in the central west were very high and a great many could not afford to go. The excitement in San Francisco, due to the exposition and other conventions, was disconcerting and diverting, but the convention did some good work; some fine papers were read and some most profitable discussions occurred.

Dr. Summersgill, Dr. William R. Dorr, superintendent of St. Luke's Hospital, and Dr. R. G. Broderick, superintendent of the new San Francisco Hospital, were most devoted to the interests of the association and provided many pleasant hours in the way of excursions and lunches for the members.

### Hospital Section, American Medical Association

The Hospital Section, American Medical Association, held its meetings in the Civic Center, along with the other sections of the association, and at a distance far removed from the meeting place of the American Hospital Association, and on the other side of town from the meeting place of the various nurses' associations. The section was very slimly attended, in fact the meeting of the whole American Medical Association was not up to the usual attendance, and all the section meetings were small, but this year the Hospital Section was smaller than usual, largely for the reason that most of those in San Francisco who were interested in hospital activities and who might otherwise attend the section meeting were attending the American Hospital Association or meetings of the sections on the various clinical subjects.

But what the section lost in matter of attendance it made up in the enthusiasm of those who were present from day to day, and more than made up in the value of the papers read before the section. There were some splendid, almost epoch-making papers read, especially in the symposium on the "Hospital and Dispensary Care of Venereal Diseases." Dr. W. F. Snow, who was kind enough to get up this symposium, knew what he was doing when he chose Mr. Michael M. Davis, of the Boston Dispensary;

Dr. Robt. T. Legge, who had had much experience in the handling of venereal diseases as a public health officer in San Francisco; Dr. Calvin S. White, who had had an equally large experience in public health work in Portland, and Dr. Robert J. Wilson, superintendent of Hospitals of New York.

Dr. Spellissy's paper on "Efficiency Standards" was read with lantern slide illustrations and was a most remarkable paper, covering an entirely new method of keeping records in St. Joseph's Hospital, Philadelphia.

During the four days' sessions of the section, the house of delegates of the association, meeting in another part of the city, was discussing a proposed rearrangement of section work in the association, the result of which was that a new grouping of the sections of the association was proposed by Dr. Hugh Cabot and his Committee on Sections and Section Work, and the house of delegates finally adopted the new arrangement, which provided for four groups instead of fourteen independent sections as heretofore. The first group, called group "A," is composed of the subjects named: anatomy, physiology, pathology, bacteriology and pharmacology; the second group, or group "B," is composed of the sections on medicine, diseases of children, nervous and mental diseases, preventive medicine and public health, and hospitals. The third group, or group "C," is composed of all operating surgery, including general and abdominal surgery, obstetrics, gynecology, genito-urinary diseases and orthopedic surgery; and the fourth group, or group "D," is composed of the specialties—eye, ear, nose and throat, the skin, and three sections, one on stomatology, one on gastro-enterology and one on proctology.

In proposing a rearrangement of the sections in this way, it was believed by the committee, and agreed to by the house of delegates, that much better work could be done, a larger variety of subjects treated, and that there could be a concentrated attendance in the several groups of people interested in those particular branches; it was believed also that the attendance on the sections would be larger. It was agreed that the individuality of the sections was not to be disturbed, but that the number of sessions of each would be fewer.

In regard to the rearrangement of the Section on Hospitals, the chairman and secretary of the section were fully conversant from the beginning, with the proposals of the committee, and it was in reality based upon an exhaustive report made to the committee by the officers of the Section on Hospitals, that the committee's proposal took its present form.

Dr. L. W. Littig, of the staff of Mercy Hospital, Davenport, Iowa, was elected chairman of the section for the coming year, the secretary holding over, under a recent ruling of the house of delegates that secretaries of sections would hold office for three years. Dr. F. A. Washburn, of the Massachusetts General Hospital, is the representative of the section in the house of delegates, and the executive committee is composed of Dr. Winford Smith, Dr. L. B. Baldwin, University Hospital, Minneapolis, and Dr. H. B. Howard, superintendent of the Peter Bent Brigham Hospital, Boston.

DR. C. D. WILKINS,
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Superintendent Charity Hospital,
New Orleans, La.

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Superintendent Aurora General Hospital, Aurora, Ill.

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Third Vice-President,
Superintendent Lakeside Hospital, Cleveland, Ohio.

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### Hospital Supplies in South America

One of the staff agents of *The Americas*, a new trade publication got out by the National City Bank of New York, writes his paper as follows:

Dealers in optical goods and scientific instruments, photographic supplies, etc., have informed us that if they can secure representations of high-class manufacturers of pharmaceutical, hospital and sanitary supplies, they will open up departments in their stores especially devoted to those lines of goods. They see a good opportunity here for these lines of goods and our investigations convince us that manufacturers of such goods would do well to send a first-class representative for the purpose of establishing connections and inaugurating a campaign for the introduction of their products.

Practically their only strong competitors at the present time would be British manufacturers. Other competitors would be the local pharmacists putting up their own preparations. They of course have not the facilities for turning out the class of goods that some of the manufacturers in the north, specializing in these articles, have.

It would be necessary for a North American manufacturer to have here a representative who would see to it that his goods are kept on the front shelves and pushed. Persons who have used the North American article, I refer to physicians particularly, have a very high regard for them. One prominent physician who has had some experience with North American products, and likes them, tells me that his usual experience when he goes to a local pharmacy and asks for an American article, is that the pharmacist first shows him one of his own preparations. If this does not satisfy him he is next shown an English preparation and not until he refuses this are the American preparations brought out, and then only in case the physician knows that they have them in stock and insists upon having them.

The bulk of the retail business in Buenos Aires is practically controlled by three of the leading pharmacists, all of whom put up such articles as the cotton gauze and other hospital and sanitary supplies and the simple remedies in which they deal. There appears to be more money in their own articles than in the imported goods.

### The Catholic Hospital Association Meeting

Marking a new era in the progress of the great and splendid group of Sisters' hospitals, one hundred and twenty-five hospital Sisters and a large number of chaplains, medical staff members, department heads and others interested in hospital activities met in St. Francis Hall, Milwaukee, at 9:00 o'clock on the morning of June 24, to inaugurate an association of Sisters' hospitals and to spend three days in the discussion of live hospital topics.

Reverend Father Chas. B. Moulinier, S. J., Regent of Marquette University Medical School, Milwaukee, was the presiding genius of the convention, as he was also the chief factor in bringing it about.

Sisters representing hospitals in nineteen states were present, as well as many members of their medical staffs and heads of scientific departments.

Father Moulinier presided over the meeting until duly elected officers were installed. The first meeting began with an address of welcome by Dr. Geo. Ruhland, health officer of the city, representing the mayor.

In the course of the meeting a constitution was adopted, following the usual form of such guiding rules, with the notable feature that it was provided in the constitution that the membership of the association should be made up of active and associate members, the active members to be the institutions, each of which should have three votes in the deliberations, the associate members to be made up of individuals interested in hospital work but not representing institutions, each of whom should have one vote.

There was a long debate at one time over the question of the limitations of the association, some of those present feeling that the association as at present constituted should be merely a local or branch association, the implication being that other states or districts or localities would create like local branches and that eventually all these branches should be aggregated into one great association. There were others who felt that this present association, while perhaps not very large, should be considered the nucleus for a far-reaching national or continental hospital association, and this sentiment finally prevailed in the name subsequently chosen, "The Catholic Hospital Association."

One of the significant discussions brought up in the convention concerned intern service in hospitals, and this came by way of one of the papers on the subject. Some of the Sisters felt that the intern situation was not just as it should be and that some definite standards should be made in regard to intern service; that if, as Dr. Warfield, who read a paper on the subject of the scientific departments in the hospital, held, the interns were to perform only the medical work in the institution, then it was necessary that there be a new group of hospital workers, possibly orderlies, who could do a far higher order of work than orderlies at present perform but who need not be medical men; and the Sister suggested that there ought to be provision made somewhere for the training of high-class male nurses, or orderlies, who could take the burden of much of the detail work off of the interns and relieve the nurses of a class of occupation that did not belong to them.

At the closing meeting, a splendid compliment was paid to his Grace, Archbishop Sebastian G. Messmer, who was, by rising vote, declared the honorary president of the association. It was declared that Archbishop Messmer had been enthusiastic in his support of the new movement and had given it every encouragement, and was in a large way responsible for the creation of the new association.

When it came to the selection of officers of the association there was an all-pervading feeling that Father Moulinier, who had brought the association to fruition, should be its first president. The reverend gentleman protested vigorously and insisted that one of the Sisters or one of the medical staff members should be president. The convention had its way, however, and the following officers were chosen:

Honorary President — Rt. Rev. Sebastian G. Messmer, Archbishop of Milwaukee.

President—Rev. Father Charles B. Moulinier, S. J., regent of Marquette University Medical School, Milwaukee.

First Vice-president — Sister Mary Joseph, St. Mary's Hospital, Rochester, Minn.

Second Vice-president—Mother Richard, St. Francis Hospital, Lacrosse, Wis.

Secretary—Dr. Maud Williams, Milwaukee.

Treasurer—Sister Marie, of Misericordia Hospital, Milwaukee.

Two Members of the Executive Board—Dr. W. E. Fairfield, St. Mary's Hospital, Green Bay, Wis., and Miss Marie Lawless, of Mercy Hospital, Chicago.

The next time and place of meeting were left to the president and executive committee.

The first Sisters' hospital meeting was a great success. Some very brilliant papers were read and there was some splendid discussion, papers and discussion that will be most profitable to the hospital people throughout the world.

Father Moulinier will make arrangements for the publication of the transactions in volume form, and those who wish copies will communicate with him.

**OFFICERS OF THE CATHOLIC HOSPITAL ASSOCIATION FOR 1915–1916**

HONORARY PRESIDENT,
RT. REV. SEBASTIAN G. MESSMER,
Archbishop of Milwaukee.

PRESIDENT,
REV. FATHER CHAS. B. MOULINIER, S. J.,
Regent of Marquette University Medical School,
Milwaukee, Wis.

FIRST VICE-PRESIDENT,
SISTER MARY JOSEPH,
St. Mary's Hospital,
Rochester, Minn.

SECOND VICE-PRESIDENT,
MOTHER RICHARD,
St. Francis Hospital,
Lacrosse, Wis.

SECRETARY,
DR. MAUD WILLIAMS,
Milwaukee, Wis.

TREASURER,
SISTER MARIE,
Misericordia Hospital,
Milwaukee, Wis.

EXECUTIVE BOARD,
DR. W. E. FAIRFIELD,
St. Mary's Hospital,
Green Bay, Wis.
MISS MARIE LAWLESS,
Mercy Hospital,
Chicago, Ill.

The new $80,000 St. Elizabeth's Hospital at Hannibal, Mo., was dedicated July 2.

MISS LYDIA H. KELLER,
SECRETARY AMERICAN HOSPITAL ASSOCIATION.

## The Trend of Modern Hospital Service[1]

BY JOHN A. HORNSBY, M. D.,
Editor of THE MODERN HOSPITAL.

"An eye for an eye, and a tooth for a tooth," of the old Mosaic law, gave way, at the dawn of the Christian era, to the nobler sentiment of the common Fatherhood of God, and the Brotherhood of Man. The Crusaders, who gave this sentiment to the world, and injected it into civilization, were the devotees of Christianity, the standard bearers of the new religion, the brotherhoods and sisterhoods of the Catholic Church.

For thousands of years the care and cure of the sick and hurt had been predicated on the law of chattels, on the preservation of serfdom and modified forms of slavery; the military leader demanded that his soldiers be fit to fight, and he commanded that whatever was necessary or possible should be done to that end. The administrators of the fiefdoms about the walled cities of the world demanded that the women who could not fight, and the children, be kept in fit condition to plant and harvest the fields. It was an economic era, with the sole end in view of maintaining vassalage and keeping up feudalism; but there was no brotherhood of man, none of the humanities about it.

All could not be done in a day, or a year, or a century, but the sisters and monks of the then narrow Christian world spread their gospel of love and unselfishness to the farthest outposts.

Little by little improvements were made: there was better care of the sick, more kindness, more unselfish ministration, more comfort for those afflicted; not wholly for economic reasons, but because they were the common inheritors of human frailty and the common victims of disease.

The pages of history, from the dawn of the Christian era to within a hundred years ago, were filled with the devotion, self-sacrifice, dangers, hazards and helpfulness of the Fathers and Sisters of the Catholic Church.

It would not be profitable to trace the items of improvement in hospitals during that long period; let us take the more recent past.

One hundred years ago, or perhaps two hundred, there came a conflict between science and religion; a conflict that has been going on ever since, and, to perhaps a limited degree, went on long before; but within the time mentioned this conflict had taken on definite form. No longer were the humanities sufficient; there came the inexorable claims of science, not always tending to the comfort and pleasure or happiness of man.

But out of this conflict came a new order in the hospitals of the world. To humanity and unselfishness and kindly ministrations were added improvements and discoveries made in the science of medicine and the allied sciences and arts. As in most other cases where human interests and human sentiments conflict, there was a compromise; and today we are the heirs of the beneficences of that compromise. Never was humanity held higher than now; but the processes of evolution have amalgamated into that humanity the scientific achievements of our age; and today is more blessed than former times; partly due to evolution in the human family in the direction of what we have come to call "service," and partly due to scientific discoveries which have apotheosized, not the cure of disease, but its prevention.

The hospital of today that contemplates only the relief of sickness, the cure of those who are ill or hurt, fulfils only a small part of its obligation. It must prevent sickness; must keep people well instead of getting them well after they are sick.

The hospital of today is not a thing within four walls; it is not a house that shelters the sick; it is a state of mind. It permeates the whole community; out from its walls radiate all its influences. Like educational institutions everywhere, it teaches and trains those who are to minister, and these in their turn go out into the community and carry its blessings.

The hospital is a health center that takes into the homes of the people the principles of hygiene as we know them today, the laws of sanitation, the ideals of pure liv-

MR. ASA BACON,
TREASURER AMERICAN HOSPITAL ASSOCIATION.
Superintendent Presbyterian Hospital, Chicago, Ill.

[1]An address delivered before the First Annual Convention of the Catholic Hospital Association, Milwaukee, Wis., June 24, 1915.

ing, good housing, the proper rearing of children, the installation of good morals in their minds.

What a wonderful edifice it must be if such an institution is to perform these huge functions! And in order to do so there are some definite necessities, some facilities, some equipment that the modern hospital must possess itself of, and about which it must idealize and dream and plan and work.

The pioneers of modern medical science have discovered the cause of many diseases within recent years that were not long since incurable and whose beginnings were not known.

Overtowering above all other causes of disease are certain microscopic forms of life. The ancient plague that devastated Europe and Asia and Africa for ages we know now to be caused by an infinitely small organism transmitted through rodents, rats, mice, squirrels, by means of the flea, to human beings; knowing this, the plague is no longer uncontrollable, and it has ceased to be a menace to mankind.

Spotted fever that devastated Europe and destroyed whole nations, we now know to be caused by another organism; and not only is this organism isolated and identified, but the masters of pathology have created another organism that destroys the germ of spotted fever—and cerebro-spinal meningitis, the newer name, thanks to Flexner and Jobling and the Rockefeller Institute, is no longer a menace.

Yellow fever is caused by the bite of a mosquito that had previously been infected with the germs of the disease, and knowing this we can keep the mosquito away; and acting upon this process yellow fever is practically banished from the world.

Gangrenes, childbed fevers, erysipelas, the infections following wounds, all these we know to be caused by microorganisms that have been identified, studied, and with whose character and habits we are so familiar that we can guard against them.

If these things are true, and we *do* know the cause and prevention of these diseases, then the further continuance of the diseases themselves must be due to our own carelessness and indifference, or to the ignorance of the individuals who have to do with their prevention.

And this brings us down to the very moment in hospital efficiency and good hospital service. This is why we talk about bacteriology and pathology in our hospitals. This is why the doctors demand blood counts, the examination of secretions, and the tissue of abnormal growths. Are these not sufficient reasons for our extending every effort in our institutions to develop and utilize these processes of science?

And if we are to make use of the knowledge of medicine in its scientific phases, to whom must leadership be assigned? It seems obvious that we must lean upon and look to the physician, whose life work has been a study in the realm of these sciences.

Too many hospital administrators today take the ground that their own work, the physical affairs of their institutions, the cleaning of the house, the good feeding of the sick, the handling of employees, the smooth running of the physical machinery, are the all important things.

It is true that without these the whole machine would break down and that its usefulness would be at an end. But let us not forget the sequence and order of importance of the work in the hospital. First, the patient's best good; and (2) following in step with this, the carrying out the doctor's orders in his behalf; (3) the setting up and proper working of the necessary scientific adjuncts to the doctor's service, the facilities by which he can determine the nature and character of disease, and the machinery with which he must work for its cure; (4) the proper nursing of the patient, which is hardly separable from the doctor's own ministrations; (5) the physical machinery that must serve to keep the institution in proper running order; its lighting, heating, ventilation, the proper feeding of the patients, nurses and employees, the living conditions that will make their work efficient and comfortable and pleasant, conditions for social and educational association, that will add to their efficiency, the beautification of the hospital surroundings, for its elevating influence on patients and well people.

If we have given our doctors the things they need in the institution for the diagnosis and treatment of disease, they will be enabled to learn from their experiences, and improve their methods continually, and they will be able to teach those other elements in the hospital, the younger physicians and the nurses, and these again, coming in contact with the community at large, will be able to do a world of good by the education of the public at large in the things necessary to keep well, morally, mentally and physically.

So we can easily see, as we study the requirements of our hospitals, that everything goes back to the patient, and the patient leans on and goes back to the doctor; and if our institutions are to be worth while, if they are to take foremost place in our communities, the lines of improvement must be in consonance with the requirements of modern medicine.

## The Educational Function of Hospitals[1]

BY LOUIS F. JERMAIN, M. D.,
Dean of the Marquette University Medical School, Milwaukee, Wis.

In order that our hospitals shall render the highest possible service to humanity they must not only care for the sick entrusted to them in the most scientific and approved manner, but must aid in the dissemination of existing knowledge concerning the origin, prevention and eradication of disease, and by reason of the excellent opportunities at hand in well equipped institutions lend all possible aid toward the enhancement and enrichment of such knowledge.

All private hospitals are quasi-public institutions, just as much as are railroads, telegraph lines and banks. Their responsibilities to the public lie not only in the efficient care of the sick, but also in the broader educational activities which tend to benefit and elevate the human race and increase human comfort and happiness.

The educational function of the hospital is therefore a function no less sacred, no less altruistic and beneficial and even more ramifying than the function of caring for the sick; one the full exercise of which will forever remove the last vestige of popular horror of hospitals and make of them true havens for the afflicted.

The educational activities of a hospital may conveniently be divided into:

1. Education of medical students.
2. Education of staff and medical profession.
3. Education of nurses.
4. Education of interns.
5. Education of the public.

*Education of medical students.* All hospitals in cities where there is a medical school owe it to themselves and the public to seek some teaching connection with such school. Hospital authorities should hold themselves re-

[1]Paper read before the First Annual Convention of the Catholic Hospital Association, Milwaukee, June 24-26, 1915.

sponsible in a large measure for the training of the future practitioners of medicine and members of the staffs of hospitals. If hospitals close their doors to medical students, how can they expect the services of competent men in the future? Where are medical students to get their clinical training if not in the hospital?

The hospital must of necessity be the laboratory wherein the third and fourth-year medical student does his work and receives his instruction. It is only in the hospital that he will find opportunity to apply his knowledge of anatomy, chemistry, physiology, pathology and bacteriology, and correlate his scientific with his practical studies. The hospital with students in its wards not only gives better service to its patients, but doubles its usefulness to the profession and the public.

No one would for a moment entertain the proposition to train nurses outside of hospitals, and yet hospitals expect their future staff members to receive a training which will make of them efficient practitioners of medicine, without granting them even the opportunities of a nurse. Hospitals must realize that the medical student as well as the nurse must learn his most valuable lessons in the hospital wards from the patient. They should also realize that the medical student in the hospital not only receives valuable instruction and training, but also gives to the hospital services of value often unobtainable from staff and interns. Osler says, "In the interests of the medical student, of the profession and the public at large, we must ask from the hospital authorities much greater facilities than are at present enjoyed by the students of medical schools. The work of an institution in which there is no teaching is rarely first class. There is not that keen interest nor the thorough study of cases, nor amid the exigencies of the busy life is the hospital physician able to escape clinical slovenliness, unless he teaches and in turn is taught by interns and students. It is, I think, safe to say that in a hospital with students in the wards the patients are more carefully looked after, their diseases more fully studied and fewer mistakes made." Medical students in a hospital are in a measure a guarantee of thorough work on the part of the staff and interns.

REV. CHARLES B. MOULINIER, S. J.,
PRESIDENT OF THE CATHOLIC HOSPITAL ASSOCIATION.
Regent of Marquette University Medical School, Milwaukee.

*Education of staff and medical profession.* The hospital is pre-eminently the school for the training and development of the physician. It is the laboratory of scientific investigation and research into the clinical problems so many of which await solution.

There are problems and difficulties in the education of a medical student, but they are no less difficult than the continuance of the education of the physician and surgeon. To no class of men does the wise comment of Plato, "Education is a lifelong process," apply with more aptness.

The most important factor in the education of the physician is the patient, especially the hospital patient. It is in the well equipped and well conducted hospital where careful histories are taken, good records are kept, thorough examinations are insisted upon and all laboratory and other diagnostic refinements are available that the patient assumes the maximum of educational value.

Hospital patients should, in a sense, be the property of the hospital during their stay at the institution, and not the property of the physician who happens to send the patient, or the member of the staff who happens to be "on service."

A hospital patient is entitled to and should receive the benefit not only of the experience and wisdom of the physician in charge, but the skill and knowledge of the entire staff of the hospital. Patients should select a hospital because of the reputation and skill of its staff, all of whom are intensely interested in their condition and welfare, and with the knowledge that the services of all are at their disposal.

Entrance of a patient into a hospital should carry with it a guarantee that the medical and surgical services rendered therein are of the highest type, the representation of the most modern scientific attainments and the consummation of the combined thought and skill of the entire staff. Only under these conditions does the patient receive the highest type of service and become of value, educationally speaking, to the staff, the profession, interns and students. Such service would not only be the best for the patient, but would enhance greatly the reputation and efficiency of the hospital.

Hospitals should be responsible for the medical, surgical and obstetrical care of every patient who enters. By what right does or can any physician who seeks hospital care for his patient deprive that patient of the best services available at such institution? Every hospital should, in the interest of the patient, the public and its own reputation, demand the right to insist upon every patient receiving the benefit of such service.

The records of all patients should be available for study, comparison and compilation. The staff and interns should meet frequently and regularly for scientific discussion and deliberation, medical literature should be reviewed, hospital cases examined, diagnosed, and their pathology and treatment discussed, x-ray, post-mortem and laboratory findings studied and correlated with clinical findings. Members of the medical profession, nurses and medical students should be invited to attend these hospital meetings and conferences, and take part in the discussions.

Group of Sisters in attendance at the First Annual Convention of the Catholic Hospital Association, Milwaukee, June 24-26, 1915.

Every member of a staff owes it to himself, to the hospital, the patient and the public to keep well abreast of the advance in scientific and practical medical knowledge. In order to do this he must not only study his own cases carefully, but he must give others on the staff the benefit of his knowledge and experience, and in return receive from them encouragement, inspiration, advice and instruction in the special subjects in which they are interested and along lines which he himself has not found time and opportunity to perfect himself.

The hospital staff is the embodiment of all that is educational in a hospital, and unless the staff be composed of the right men the hospital will fail in all its educational functions. The appointment of the staff is therefore a most difficult and important problem.

Hospital staff service is a public service, and the members must not be men who seek appointment for selfish reasons. They must be ever ready to give freely of their time and energy for the benefit of the public and the profession and in the interests of education and the advancement of medical science. There can be no drones in the hive, all must work and all must share the burden of responsibility. There must be unity of purpose and action and unselfish devotion to the realization of the ideal in hospital service.

A hospital may possess the finest buildings, the best equipped laboratories, the most modern facilities, and if it has not the right men on its staff it will fail in the broader function of service to the patient, the profession and the public. The hospital with laboratories of pathology, bacteriology, chemistry and x-ray constitutes the workshop, the equipment, the tools, but neither is of much value either to patient or public unless the staff consists of men who know how to use the tools and actually use them.

The hospital staff must be made up of men who fully realize their educational responsibilities, who teach students, nurses, interns, the medical profession and the public, because of a love and a desire to impart to others what they themselves have garnered into the storehouse of knowledge and experience.

Love of fellow-men, unselfish devotion to the best service to mankind are the impelling forces of the true educator in hospital as well as university.

*Education of nurses.* The training of the nurse is still to too great an extent looked upon as distinctly manual, and the training school as a part of hospital service rather than an educational institution. Theoretical and practical work should be well balanced, and the nurse should not be trained solely because the hospital needs her, but because the hospital has something to give to her.

In the proper education of the nurse, all agencies available, such as hospital staff, interns, medical school, dispensary, training school and social service should be utilized to the fullest extent possible. Service to the sick no longer means only manual care and sacrifice of self, but new and ever widening activities are opened up, no less essential than personal care.

Specialization in the profession of nursing is rapidly assuming the same importance as specialization in medicine, and training schools must take cognizance of this fact, not that they should train specialists, but a nurse after graduation may assume the duties of chef, housekeeper, superintendent of asylum or sanitarium, school nurse, department store nurse, health inspector, factory and workshop inspector, milk station manager, fresh-air nurse, tubercular nurse, anesthetist, x-ray operator, laboratory technician or social worker, and her training must in consequence be one the foundation of which is a higher preliminary education than that usually required, and one which enables her to give material assistance in the solution of every health and social problem.

The training of a nurse should be a liberal education in itself. How better can you prepare a woman for the duties of married life and motherhood than by the instruction she receives in domestic science, the care of the sick, the feeding of infants, the causes of disease and its prevention and the study of social problems? Whatever the future activities of such a nurse may be she will be an influential factor in the conservation of the health of the nation as well as the happiness of its citizens.

A group of students, Sisters and hospital technicians at work in the blood room of the laboratory, Marquette University Medical School, Milwaukee. At the close of the convention of the Catholic Hospital Association a six-weeks' laboratory course for hospital workers was inaugurated. It is said that the Sisters are taking hold of the work with great enthusiasm.

Training schools fail in that they do not educate their pupils on the professional and character-building side, and hence do not attract the most desirable women. They fail because too much emphasis is placed upon the manual and not enough on the educational development which fits them for the many and varied activities now open to them.

*Education of interns.* This is by far one of the most important educational duties of the hospital. It has been fully discussed by Dr. Warfield in a previous paper and need only be touched upon by way of emphasis.

Hospitals must realize that intern service is but a continuation of medical training as inaugurated during the third and fourth years in the medical school, and that an intern enters the hospital not for the purpose merely of serving as an orderly, elevator man or even anesthetist, but that he expects to learn and to be given every opportunity to apply his scientific knowledge to practical uses in the curing of disease and the alleviation of suffering.

No other period of a physician's life and education is more pregnant with possibilities for development along true scientific and humane lines than this one. It is the duty of the hospital and its staff to aid, encourage and insist upon the proper utilization of all means at their disposal for the proper training and development of the intern.

Hospital staffs too frequently regard interns as servants rather than pupils and coworkers. There is not the proper cooperation nor that freedom of interchange of thought and opinion so desirable and necessary if the best results are to be obtained. Older members of hospital staffs forget that the young medical graduate, fresh from the laboratories of a modern medical school, brings with him methods and a technic which it may be wise and useful to adopt. Furthermore, the enthusiasm, energy and ambition of youth are contagious and serve to arouse many an older man from the lethargy of routine.

The chasm of "experience" which so often separates the old from the young should be bridged by closer cooperation and confidential scientific intercourse, and the result is certain to be beneficial to both.

*Education of the public.* The educational function of the hospital is of more recent development, but bids fair to become one of great service. Preventive medicine in its very nature is a matter largely of public education, and hospitals must assist in this work because the hospital is pre-eminently the institution with which social service work can best be conducted.

## Report of the Committee on Medical Education and Medical Organization[1]

BY JOSEPH B. HOWLAND, M. D.,
Assistant Administrator, Massachusetts General Hospital, Boston.

Mr. President: Your committee begs to report as follows:

The progress in medical education and hospital reorganization which is going on so rapidly in this country is due to a large extent to the admirable analysis of our medical schools and their clinical facilities as presented by Mr. Abraham Flexner in his report to the Carnegie Foundation for the Advancement of Teaching in 1910, and to suggestions contained in a similar report on European medical schools and hospitals by the same author in 1912.

It is unnecessary for me to quote at length from these, as you are undoubtedly familiar with them. We also had the pleasure of hearing Mr. Flexner on the same subject at the meeting of this association in New York in 1911. All interested in medical education and hospital organization must be profoundly thankful for the Foundation which gave us such clear and thorough reports.

The impetus given by them is not in any sense spent and will not be for a long time, and the progress we have made this year is in line with suggestions contained therein.

### TEACHING MEDICAL STUDENTS

Of the forty-one large hospitals to which letters were sent, thirty-seven answered that they were used for teaching purposes. Of these, twelve stated that during the past year changes in teaching had taken place whereby stu-

[1]Report read before the Seventeenth Annual Conference of the American Hospital Association, San Francisco, June 22-25, 1915.

Group of members of the American Hospital

dents are now admitted to the wards as clinical clerks, a most favorable showing.

Those of us present who have had medical training undoubtedly got most of our undergraduate hospital experience in amphitheaters listening to clinical lectures and perhaps wishing we could get near enough to a typhoid patient to see the "rose spot" being demonstrated; or do more than see the crayon outline of the enlarged spleen as mapped out by the lecturer. Some of us studied medicine since the once popular amphitheater lecture gave place to the bedside demonstration in which more students took part than could get near the patient's bed. How few of us had the opportunity of spending a month or more of our fourth year actually doing the ward work, rubbing elbows with the visiting physician, house physician, pathologist, chemist and interns! Once this place has been made for the intelligent student, he is missed if absent for a day. At the Massachusetts General Hospital four students at a time are given practical work for a month in a 20-bed ward.

They are under the charge of an instructor, who, if not a member of the hospital staff, is given a temporary appointment which makes him a member of the hospital family and gives him some of the privileges and responsibilities of a staff officer. He teaches the student practical history taking and oversees his work in the clinical laboratory. The student is also under the direct observation of the house physician and interns and acts as their assistant. The history he takes is examined, corrected, and is rewritten, if necessary, by the student and then becomes part of the hospital record. He makes a physical examination; takes blood, sputum and excreta to the laboratory for his independent examination. Daily notes are written by him from dictation by the intern. The student also demonstrates his cases to the instructor and his classmates. In short, he is learning medicine by doing things for his patient and not alone by hearing others talk about the case. For the past two years at the Massachusetts General Hospital we have taken advanced students as clinical clerks for periods of one or two months in the summer, and they are proving of such value that interns are very anxious to secure their services. This year the Harvard Medical School is to give credit to students for summer work done in the wards of the hospital. It is not alone to medical students of Boston that we offer this summer work, but to those in distant cities. This we feel will prove of benefit in acquainting such students with the hospital and encouraging them to apply for internships later.

### FIFTH YEAR OF HOSPITAL WORK

We find that five medical schools have recently required for a degree a fifth year of hospital work and that two more are considering it. The University of California, University of Minnesota, Medical Schools of Ontario and Nova Scotia are among those now requiring the fifth year.

In Pennsylvania a year of work in a suitable hospital is required for registration to practice in that state.

It is not too much to expect that we shall have many more schools follow their lead in the near future.

### STAFF REORGANIZATION

With other signs of progress in hospital work we find a rapidly growing tendency to change the old unorganized divided service into continuous services for chiefs and for the formation of committees of the staff and administration to have general oversight of the work.

One of the most conspicuous of the hospitals reporting such reorganization during the past year was that of the Massachusetts Homeopathic Hospital, whose superintendent, our late president, Dr. Wm. O. Mann, gave much time and thought to the details of the new plan, and the increased efficiency which that hospital is sure to show will be a monument to Dr. Mann's tireless devotion to its welfare and good name.

Of the 41 hospital superintendents to whom we wrote, only 11 stated that they still had divided services in all departments. Of these, 4 were not teaching hospitals.

While the more conservative hospitals are lining up in their reorganization to the newer requirements of teaching and research and obtaining continuous service of chiefs, another important question is being considered by a few of the hospitals having close affiliation with medical schools. It is, Why should not clinical professors be salaried men giving full time to their work?

Is there not enough for these men to do in teaching, clinical study and research work as well as for the professor of physiology, chemistry, pathology or bacteriology? There is no doubt, I think, but that the reason clinical physicians and surgeons today make their teaching and hospital work incidental to their private practices, is, that there is more money in the latter method. I think there is little doubt but that these men, if they could af-

Association in conference at San Francisco, June 22-25, 1915.

ford it, would prefer to devote their whole time to hospital work of one kind or another. As Mr. Pritchett says in his introduction to the Carnegie Foundation Report on Medical Education in Europe, "In just such proportion as higher standards of admission to the medical schools and higher requirements of admission to practice are enforced, in just such proportion will the body of men who compose the profession come to be actuated by the ideal of service rather than by the ideal of gain." This point of view should also be of interest to the trustees of hospitals. In the past, and too often at present, hospital trustees feel that their full duty is done if the individual patients admitted to their wards are well cared for. The spirit of the present day calls for public service; service to the mass rather than the individual, and the mass will gain only if the great teaching clinicians are giving all of their time and thought in their professional work by cooperating to the fullest degree with the men engaged in laboratory work.

The question of providing adequate living salaries for these men is to my mind the only difficult one to be met. This I find to be the opinion of the hospital superintendents generally. How may it be accomplished? Medical schools rarely have endowments sufficient for the purpose. Is it not to some degree a proper expenditure of money given to hospitals for the care of the poor? If we agree that full-time service of the chiefs of clinical departments will be of aid in public service to the public as a whole, it must equally benefit the individual.

Supposing that the money available for salaries from the school and general funds of a hospital are not sufficient, how may this be increased? Why not from fees from private patients treated in wards in the same hospital in which the poor are received? I believe this is the probable solution in this country.

It is quite outside the limits of this report to discuss the arguments for and against a private hospital in connection with a charitable institution; to speak at length of the advantages in the hospitals of some of our communities that the poor may receive but from which the well-to-do and rich are barred, no matter how much they need the agencies which may only be obtained there for diagnosis or treatment. If the hospital received the fees, instead a few men, they would provide to a considerable extent suitable salaries for the chiefs and also allow living salaries to young men who desire to do research work but who are now forced to do private practice to get a living. It would be a step in the right direction if a modification even of this plan could be more commonly adopted, namely to allow the chiefs to retain fees of certain patients sent by themselves for admission, but not permitting consultation or operating outside the hospital or to receive fees from patients coming directly to the hospital.

The Peter Bent Brigham Hospital of Boston has adopted this method. Dr. Fred T. Murphy, Professor of Surgery of Washington University Medical School, St. Louis, advocates such a scheme.

The University of California Hospital reports, "We are definitely committed to full-time pay chiefs of service as recommended by the Rockefeller Foundation. It may be necessary to have modified plans of full-time departments." At present that hospital has full-time paid chiefs in the departments of obstetrics and gynecology and in the department of pediatrics.

The professor of surgery at the University of Minnesota Hospital is a salaried man, giving free time to teaching and hospital work.

Dr. John Lovett Morse, of the Children's Hospital, Boston, writes that that institution would accept full-time chiefs in its medical department in connection with the Rockefeller Foundation.

The New Haven Hospital, in July, 1914, made an agreement with the Yale Medical School whereby its chiefs of service became full-time paid men.

Dr. Winford Henry Smith, superintendent of the Johns Hopkins Hospital, writes us as follows: "The departments of medicine, surgery and pediatrics have been placed on the full-time basis. That is, the physicians, surgeons and pediatrician-in-chief, together with their associates, are on the full-time basis. They are paid adequate living salaries not to engage in private practice. They may see patients in consultation and may charge fees, but the fee goes to the fund. They are the sole judges as to whether or not they care to see private patients; except that the hospital reserves the right to admit private patients who are unable to pay medical or surgical fees, in which case the chief of service is responsible for the treatment of the patient. We still have part-time men connected with all three of these staffs, but the bulk of their work is in connection with the out-patient department and in teaching. The full-time staff is responsible for the hospital service. In my opinion the full-time basis is ideal from every standpoint."

It is very gratifying to this committee to find so many hospital authorities adopting or discussing reorganization plans at this time, and I believe the year to come will be as fruitful of progress as has the past.

## The Hospital's Duty to Medical Science for the Furtherance of Human Welfare—by Research, Production of Papers, Library and Museum[1]

BY J. L. YATES, M. D.,
Chief of Surgical Staff, Milwaukee County Hospital.

Medicine in all of its ramifications is fundamentally a learning and teaching profession: learning the normal and abnormal by observation, study and experimentation, learning, finally, the cause and exact nature of disease, moral, mental and physical, in order to make possible early recognition, prevention and alleviation; teaching of others not alone how to learn the most effective application of established knowledge, but so teaching as to give inspiration for continued improvement in methods and accomplishments of learning and teaching.

The enormous and complex medical structure that extends throughout the world is composed of institutional and individual units, each one subject to these learning and teaching responsibilities and obligations. Just in so far as a unit or a collection of units fails in the fulfilment of these obligations, by that degree is progress impeded and human welfare, moral, mental and physical, materially injured. China may be cited as an exaggerated example. There are tiny Chinas wherever there are unprogressive units, and the larger and more influential such units, the greater and more widely distributed are the consequent injuries. The greatest of these is probably moral degeneration.

A hospital as an institutional unit in this great medical structure is obligated to learning and teaching, and in order to be worthy of the name must be solely an agent in public service. It may not be conducted primarily for gain, it must not pauperize, and all individuals connected with its activities, from the executive head to the least important employee, are but servants of the same agent in the same cause working under the same obligations to human welfare, the prevention and relief of disease, moral, mental and physical. Moreover these obligations are so patent and so imperative as to make any individual therewith connected, who fails for any reason in aiding their fulfilment to the highest degree possible, a self-confessed obstruction to medical progress, and hence to public service and morally responsible for resultant far-reaching evil effects upon health, life and happiness.

The paramount special duty of a hospital in order to serve its particular purpose in the large medical development must be to afford its patients the best possible care at the least possible cost in time and money not only to the institution but to the individuals concerned, patients and servants alike. Giving the best possible care involves learning what that care is, how to give it and the teaching of others as indicated above. This involves true learning; supplementing the knowledge gained from others by the development of new possibilities based upon facts disclosed by observation and study. This is rational research in a broad sense.

A popular idea of research is the futile attempt of some unpractical idealist with too little sense to make money, to discover something at great cost that shall be utterly worthless. A better, saner conception would be to consider it as a competent curiosity to learn more than is known about any particular line of endeavor, from comparative philology to digging ditches. This should be encouraged and fostered for two reasons; the facts thus established will ultimately aid some one in knowing what to do and how to do it, i. e., learning and teaching.

Research is scientifically accurate, it demands controlled imagination, energy, patience and intellectual honesty, together with an exact knowledge of the fruits of other labors along similar lines. Thus alone may one learn how to interpret one's own and others' observations, particularly the avoidance of fallacy, that most desirable refinement of all wisdom, the knowledge of what not to do. For example, spurious research is worse than futile; dangerous at first to others because of its advertising possibilities, it is ultimately fatal to the perpetrator's scientific soul and standing, and is to a less extent but similarly harmful to those unfortunate professional brethren who have accepted its teachings and utilized them in practice.

Apply these considerations to a hypothetical case, and in an imaginary fashion test out the implied proposition that by the quality of service alone shall you know hospitals.

A patient critically ill presents herself hopefully and fearfully for admission to a hospital. What are her hopes? That she may be returned as nearly as possible to perfect health at the least cost in danger, distress, disability and dollars. If her hopes are to be realized what does this imply as the best possible care? That from the time of admission until discharged she must realize that she is not a mere case to afford passing interest or a financial asset to be forced to contribute as largely as possible by the addition of extra charges for everything excepting possibly bad air and noises. Rather must she be made to appreciate that she is an individual whose welfare every servant in the institution has the time, tact and ability to advance and with manifest pleasure in so doing. This means that her care is based upon accurate medical knowledge, that the nursing is competent because medical knowledge recognizes and demands such nursing, and for the same reason that proper food is served attractively, that orders are executed promptly and accurately and are truthfully recorded, that the equipment is adequate in nurses, interns, apparatus and orderlies, that the furnishings are in good taste and that everywhere is cheerfulness and radiant cleanliness. The working force of such an institution, superbly organized, competent, alert and prepared, diffuses a spirit of confident optimism which is promptly communicated to the patients with incalculable benefit. This institutional buoyancy is unmistakable and comes from an established precedent, a self-generating stimulus that impels individuals to do each job a little better; in short, it is the spirit of research applied to the daily tasks.

The price of this attainable Utopia is eternal vigilance against self-satisfaction, false pretenses and commercialism, all of which are incompatible with the spirit and teachings of true research, which is altruistic.

Return again to the patient: What are her fears? That her hopes may not be realized. No consideration need be given this aspect beyond the admission that in so far as those hopes could not be realized the institution fails correspondingly to qualify as a hospital according to the premises above stated. Likewise if these premises are true this institution, in failing to give the best that its limitations permit, is existing under false pretenses. This is like spurious research in its effects. The realization of such unpleasant facts is not comforting, but it is a stimulus to do better, and that is the spirit of research.

Hospital managements frequently fail to realize that

[1]Paper read before the First Annual Convention of the Catholic Hospital Association, Milwaukee, June 24-26, 1915.

their very existence depends upon the fruits of investigation, and the debt owed thereto can only partially be repaid by fostering studies that will add a mite to the sum of knowledge. When an individual refuses responsibilities and comes to the belief that the world owes him much that he has not, he usually takes what is given with a demand for more, instead of showing appreciation in action. Such an individual is usually termed a pauper and is supposed to be deficient in self-respect. An institution that depends for its existence upon the knowledge gained from the work of others and makes no attempt at repayment in kind, that institution also is a pauper. It may be materially successful, but it is just as wholly a pauper as an individual pauper, whatever be the fruits of his mendacity. By the same token the individual who seeks a cure for his disease seldom realizes that his treatment has come from the study of a host of other sufferers during life and after death, the tedious compilation of these studies and the development of knowledge from experimentation. His indebtedness cannot be discharged by any financial transaction.

This individual should gladly submit to any petty annoyances attendant upon a careful study of his ailment, and his family and friends should permit in case of death a complete post-mortem examination. It is the hospital's duty to encourage such investigations, to help in overcoming the selfish sentiment against necropsies, to provide the needed equipment and the men trained to do the work. To be sure, this costs money and brings directly no financial returns, and yet the actual value of the work is so great that no hospital can exist without it.

Investigators, in order to do their full duty, must publish the results of their studies for the benefit of others. Hence a hospital must encourage genuine contributions to medical literature, including nursing and all details in hospital affairs, and provide a library selected for the use of all its workers. A museum is in effect but a library wherein results are recorded in tissue changes, the literature of the foundations of rational therapy.

If the world's experience be a criterion, no hospital that has not stood for and aided investigations by its staff ever achieved leadership in developing knowledge, and these are the only institutions that are particularly capable of giving first-class care to their patients, for they alone are pervaded with that spirit of research which, being interpreted, means a chronic healthy dissatisfaction with existing conditions and an acute irresistible desire to learn how to effect improvement. Such hospitals achieve more than a local following and ultimately find their large reward, material returns to make more and better workers and to do more and better work, institutional prestige and authority that will give power to the example of that most effective contribution to public welfare, intelligent personal service.

### THE DUTY OF THE PUBLIC TO MEDICINE

The public, certainly the intelligent part thereof, also has its obligations and responsibilities to medicine. Quality of medical service available in any community is apt to be in no great degree superior to public demand; public demand depends upon the character of popular medical information—not stupid gossip, but some comprehension of what constitutes medical service. A hospital is an educational center and if its methods and accomplishments are to be entirely worthy it cannot be self-supporting. Endowment of some type is not only absolutely necessary, it must be sufficient, not to provide an asylum for unfortunate friends of the management, disguised as employees, but to give irresistibly attractive opportunities to those capable of filling various positions. This means a lavish expenditure of nothing but personal effort all directed to the one end, better service. Thus alone can the public be guaranteed proper care, and by experience educated to an appreciation of true medical values. This appreciation must compel medical units to do better work individually and institutionally. Thus may it come to pass that public opinion will stop the exploitation of students in medical schools and pupil nurses in training schools when it is more generally realized that the inevitable outcome of these revolting results of cupidity or stupidity is still farther exploitation—of the public.

## The Hospital Superintendent and the Architect[1]

BY WARREN C. HILL,
Of Kendall, Taylor & Co., Architects, Boston, Mass.

The title of this paper is of the late Dr. Mann's own coinage, and the subject was approached by the writer, even after some months of earnest consideration, with a large degree of hesitation.

Much has been written and said of what the hospital superintendent demands of the architect in connection with the planning and erection of hospital buildings, but little, so far as I know, has been written of what the architect may reasonably ask of the superintendent.

The annual expenditure for hospital buildings in this country is enormous—Mr. Bartine says it is something like $125,000,000. This sum is a conservative estimate if hospitals for the treatment of mental diseases are included in his summary. Setting aside this class of patients as being to a certain extent involuntary, the increase in the use and patronage of the general hospital is still striking. This increase is, I believe, not alone due to the increase in population, but very largely to the constantly growing feeling among our people, that the care and treatment they receive in the hospital is not experimental, but that the hospital is a place of hope and happy achievement, rather than a place of despair and death.

One hundred and twenty-five million dollars is a vast expenditure, but even this may be said to be small, compared with the cost of maintaining the hospitals already built. Once raised and expended this first cost belongs to the past, while the maintenance is an annual and ever increasing affair. The amount and the burden of maintenance very largely depends on how and by whom the initial expenditures are made. The cause of heavy maintenance charges is very often an incomplete study of the hospital in its preliminary stages, or the lack of a comprehensive scheme for development, faulty buildings, poorly arranged or too cheaply constructed. These things lay upon the superintendent and his assistants a burden of waste and other restrictions which cannot be shaken off or avoided, and must be carried forward from year to year.

One of the best and most complete of our Eastern hospitals was begun more than half a century ago, and was so planned at the start that subsequent additions, and there have been many, one by one fitted into place like dominoes. So completely do the newer buildings supplement the older that one might think the whole had been foreseen and planned from the outset.

You, superintendents and administrators, who may feel conscious of defects in planning and organization; in short, of an unbalanced institution, struggling vainly against the increasing cost of maintenance, realize per-

[1]Read before the Seventeenth Annual Conference of the American Hospital Association, San Francisco, June 22-25, 1915.

haps that a better plan and a better arrangement of units would relieve you of much that now perplexes, and you will perhaps be inclined to envy the man who has given the best years of his life to the growth of this hospital and who recently said to the writer that "it has been a happy one."

Contemplating the situation from the point of view of a building proposition, whether it be a new plant or an addition, we have a condition which, from the first, will require on the part of the trustees, the superintendent and the architect, a greater amount of time and study than is needed for any other type of building construction with which I am familiar.

With a small hospital it is the exception, rather than the rule, that a superintendent is engaged prior to building. The moderate-sized hospital more frequently has the benefit of his advice by consultation, while he is elsewhere occupied or at liberty, but the larger hospitals almost invariably build around the superintendent; or, in other words, engage him before anything in the nature of definite planning is done.

In the first case, and in the second as well, the burden falls on the building committee, and in many instances there is some one member of the committee who has a grasp of the situation and an appreciation of the essential facts, which would make him a successful hospital administrator should he devote himself to this field instead of to that in which he has perhaps already won recognition.

The ramifications of this subject are such as to make it difficult to stick closely to our text, but to return to our superintendent and his architect, let us assume that the trustees, through their committee on building, have placed in the superintendent's hands authority for preliminary plans and the subsequent execution of the work, reserving, of course, such rights and authority as properly belong to them alone.

It is undoubtedly of the utmost advantage to select an architect who has had experience in hospital construction—I mean one who understands not only sanitary doors and coved bases, but one who knows the basic principles upon which depend the economical and efficient administration of the hospital, one who is enough of a specialist to approach the task as a new proposition, not to be solved by a repetition of what "I did at Blankville last year," but by the application of clear and well-understood principles to the existing situation.

If it be a new start, a new proposition, the superintendent can embody the results of his own experience and study to a far greater extent than is usually possible if it be an addition or extension to an existing plant.

These additions often produce for both the superintendent and the architect the most perplexing sort of problems.

It is for the superintendent, in consultation, to share with his architects the results of his special experience.

It is for the architect so to use his experience and familiarity with hospital work that the superintendent may be relieved of a large amount of the burden of details without in any way abrogating his initiative and authority.

It is to be remembered that during the planning and construction period the superintendent is often doing double duty; carrying on his own work and adding to it extra burdens and responsibilities.

Some rare characters, like the late Dr. William O. Mann, reserve to themselves all initiative and authority, carry an immense amount of detail, and figuratively inhale bricks, mortar and other essentials, gleaning from their subordinates all the various information not already carried in their minds, and do a hundred and one things in addition to their regular duties, of which their architects might relieve them. Such men may, and often do, shorten their periods of usefulness by their arduous undertakings.

It is of the greatest assistance to the architect if the superintendent has acquired the ability to read sketches and to understand the working drawings and visualize them. The superintendent who carries a two-foot rule or a draughtsman's scale in his pocket is a joy; he has an appreciation of feet and inches when drawn to scale, and whatever temperamental characteristics either party may have, they will each have a common emblem and a working tool that bridges many a gulf of misunderstanding.

Much might be written of the pleasure to be derived from the mutual interchange of ideas over a hospital problem; of the education to be derived from long hours spent in conference with large-minded men and women, who bring to the problem the results of practical experience. The frank expression of ideas on both sides may lead at times to a radical difference of opinion, but more often to a prompt acceptance of the value of the practical as against the theoretical, and in any case, to a better appreciation of each other's point of view. There are many beautiful theories that do not work in practice, and an ounce of experience will often vanquish pounds of theoretical propositions. Such should be the nature of conferences between the superintendent and his architect.

The superintendent should and generally does know what is wanted. It is his business to supply the architects with this information orally or by means of sketches; it is not necessary that he be a draughtsman; it is the province of the architect to collate and place these in proper form for further examination and study. The more often the studies can be considered, the better. Here again the architect with real hospital experience has the advantage. With his better grasp of the general situation he can prepare his plans with less revision and without the necessity of a careful scrutiny by the superintendent or the building committee on the lookout for undesirable inhabitants in the wood-pile. Step by step, as the studies, the working drawings and specifications progress, further data and information will be supplied by the superintendent. Discussion of design and esthetic features should be left as far as possible to the architect. The plan may not be his, but the exterior should be, save perhaps for the proviso that no interior advantage or useful features should be sacrificed for a mere surface appearance of beauty. There is always a beauty inherent in the useful building thoroughly and skilfully designed and carried out. A hospital should never be an ugly building, but it should be primarily an efficient and economical building in operation and maintenance. An old writer has wisely said, "Well building hath three conditions—commoditie, fitness and delight." The last should be the result of the first two.

As the plans progress further and the construction stage approaches, the discussion of details will appear; materials, partitions, floors, painting, glazing, etc., should be carefully gone over. A reasonable knowledge on the part of the superintendent of the forty-seven trades entering into the building will prevent misunderstandings and assist in the team work so essential between the two, and may prevent many so-called "architectural mistakes."

Many points will show up in the progress of the building, particularly towards the finishing, which may not have been clearly understood from the plans by the superintendent, or upon which the architect may not have clearly apprehended his requirements. It has occurred to the writer that after the plans have been completed it

would be a good idea to go over the specification with the superintendent a second time, beginning at the end and reading backwards, section by section, to the beginning. We find that to outline these in that way is often of material assistance.

One may well ask how the superintendent can be expected to know his own profession, be a financier, an administrator and many other things, and, in addition, have a working knowledge of another profession. It is much to expect and yet there are many such.

It is not to be expected that all of the details of the several departments of the institution entering into a piece of work can be furnished by the superintendent, and the heads of his various departments must supplement his general knowledge with the minutiæ. The method of transmission varies; from one standpoint it is well that it should come through the superintendent, or at least be stamped with his authority or approval. One of the writer's happiest recollections is in the nature of a round table composed of the superintendent, the active member of his building committee, the architect, chief engineer, superintendent of nurses, dietitian, etc. They may not all have been present at one time, but the four first named were at all conferences. The results obtained in this particular case were accomplished with the minimum amount of friction, and proved satisfactory to all parties.

We have heard of building committees who keep a check on the superintendent, because he or she may be extravagant. I have never met one who could not be trusted on this account. Many of them spend most of their time during the preparation of plans and during construction, studying means to keep the cost down to minimum and will often argue, for economy's sake, to do without many things which they know would add to efficiency, which they know must eventually be needed, and the omission of which they feel to be temporizing with the situation.

At this point the experienced architect can and should stand firmly for essentials in equipment and accommodation. He must not let necessary things be neglected, even at the risk of being thought extravagant. When the need appears and begins to be keenly felt, the trustees are apt to ask why he did not insist upon what he knew to be necessary.

To sum up my ideas of the relations between the superintendent and the architect, it may be said that the architect is primarily the constructor, and to his knowledge of construction and practical details of building and of the esthetic conditions, due deference should be paid; that there are certain broad principles of arrangement and mechanical operation in which he should be an expert and which the superintendent will gladly leave to his judgment; that the superintendent, as an expert in the care of the sick and the administration of the hospital, does know his needs, and should be supplied with the conveniences he demands; that the experience of the one may and should complement the knowledge of the other, and that each should respect and give fair and reasonable consideration to the views of the other. If this is done, there need be no conflict, and the results will be satisfactory.

## Hospital Equipment[1]

BY LOUIS M. WARFIELD, M. D.

When one has been living in the midst of hospital affairs for many years one reaches one of two attitudes. Either one's early enthusiasm for the best, as the result of opposition, dies out, or the very opposition stirs him to renewed and repeated efforts. For the former attitude there is routine and retrogression, for the latter there is power and progression. If I seem hard or criticize too severely in my attempts to formulate a few guiding principles, do not hold it against me. We are all working for the common good and I am giving you my ideas.

It is self-evident that when we ask what constitutes adequate hospital equipment we must modify our conceptions to fit various conditions. There are representatives here from hospitals of every size, hospitals alone in communities, hospitals among many others in large cities; small, medium-sized, and large hospitals. Obviously an equipment which might be sufficient for one hospital would certainly not be adequate for all hospitals. Then, too, the matter of private, semi-private and charitable institutions has some bearing on the question. And, finally, the question of interns working in the hospital as residents must be given consideration. This meeting here, giving a stimulus to Sisters to take up laboratory work and making it probable that some may take the full three summers' work, bids fair to revolutionize your ideas of what hospital equipment should be.

The problem thus, as you see, is not a simple one of "two and two make four."

The question which naturally will be uppermost in your minds is, what is an adequate equipment for our individual hospital so that it may render to the patients the services to which they are entitled? This is no easy question to answer. I am supposed to enlighten you. I shall be fortunate if I excite in you a curiosity to know more about real hospital equipment. I think that we lose sight of the fact that one of the chief functions of a hospital is to provide a well equipped organization for the study of disease. There must be people who have disease to occupy beds in the hospital.

There is no doubt of the changed attitude of the public toward hospitals. Not so many years ago it was difficult to persuade a patient to enter a hospital unless he were driven helpless in an ambulance in order to have some operation performed. Today it is not so hard to convince patients that a careful study of their cases demands a hospital sojourn. But how much does the patient gain if the hospital has no equipment for the study of disease, no special instruments, no special appliances, no one who can use the apparatus? I do not intend to cover the whole subject of hospital equipment. I am concerned only with hospital equipment in the narrow sense of apparatus and accommodations for the diagnosis and treatment of patients. Even thus limiting the field of discussion leaves me more to say than I can well say in a limited length of time.

Let us make a few general observations. It is safe to affirm that few if any hospitals in the land lack the ordinary tools to perform operations. Surgery being the most striking and most psychologically marvelous side of the practice of medicine, as well as being the most remunerative, is always quite well cared for in the most ill equipped hospitals. In such hospitals a microscope would be an unheard-of extravagance and a blood counter and blood pressure apparatus would be superfluous. Whose fault is it? Is the staff to blame or are the administrative authorities to blame? Both, I believe. No hospital is better than the head of the attending staff. On the other hand, nothing can be done by the most enthusiastic staff leader if he is blocked at every turn by the cold shoulders of the administrative side. Your hospitals are, almost invariably, surgical shops where people are brought, where some more or less clever carpentry is performed on them,

[1]Read before the First Annual Convention of the Catholic Hospital Association, Milwaukee, June 24-26, 1915.

where they are kept a while and whence they are sent out more or less improved in health. No attention is paid to the finer diagnostic methods. The motto might well be, "When in doubt, cut." The wild scramble on the part of most of the profession of medicine to become famous surgeons rather helps and urges along that attitude in a hospital. But those in charge are not altogether blameless. A surgeon wishes some special instruments to perform operations according to Z's method. The expense may be fifty or one hundred dollars. An internist also wants a few instruments in order to study his patients and make more accurate diagnoses. Which one usually has his request granted? There is the kernel of the nut. And yet it is just as important for the surgeon to know the functional capacity of the kidneys, let us say, as to know how to take out an appendix.

Suppose we lay down a few basic principles in hospital equipment.

First, the surgeon should have only his share of moneys put aside for purchase of instruments.

Second, clinical laboratory instruments and equipment are more important than marble-lined and nickel-plated operating rooms.

Third, assistants, nurses, orderlies, scrubmaids, are just as necessary in the laboratory as in the operating room. Where surroundings are slovenly, usually one does not rise above them, and slovenly work results.

Fourth, the unused coal bin, store room, or fruit cellar is no place for a hospital laboratory. It is in the laboratory that a large part of the work is done which enables you to find out what is the matter with a patient so that you may know what to do. Why not make it as attractive as the place where you do the therapeutic work?

Fifth, laboratory work must be consecutive, not sporadic; and to be such must be presided over by some one trained to do that sort of work. It may be necessary to pay some one a good salary to take charge of the department. A cheap, poorly trained laboratory assistant in a hospital is not only a poor investment, but a dangerous one from both the hospital's and patient's standpoint.

Sixth, a hospital which pays no attention to the accurate study of disease, but simply takes care of sick people, is not a hospital in the real sense of the word; it is a boarding house for the sick.

Seventh, the closer the clinical laboratory is to the patients the more surely will the work be done. To the Lord a thousand years may be as one day, but to man every minute counts.

Every hospital, even the smallest, should have a well equipped clinical laboratory. I do not mean a room where urines are tested for albumin and sugar, and sputum examined for tubercle bacilli, but a space where stained blood smears can be studied, and all secretions and bacteriological cultures, including blood cultures, can be examined. Certain tests which have been proven of value, such as the phenosul-phonephthalein, should be performed. There should be some provision made for post-mortem examinations. In larger hospitals there should be a well equipped pathological laboratory in addition to small clinical laboratories on every floor convenient to the wards of the hospital. In some room near the operating room there should be a frozen section microtome outfit so that tissue from operations may be examined at once. Of course all this costs money. There must be trained persons to make use of the equipment—more money to spend. We are trying to save human life, and how valuable is a human life? Think of that side of it.

The chemical laboratory must not be forgotten, where protein and non-protein nitrogen determination can be made in urine and blood, and where the amount of glucose in the blood can be determined, etc.

Then there is the expensive x-ray outfit, which no hospital of any size should be without. And in the equipment we should consider the interns, the resident staff. These men should be able to do a large part of the laboratory work. It will not be long before all graduates from the good schools will be able to perform the more specialized chemical tests.

Thus, briefly sketched, is a suggestive program for the laboratory equipment. As has been said above, much depends upon the attitude of those on the visiting staff whether or not the laboratory side is encouraged. Earnest cooperation between the staff and the hospital authorities and appreciation on both sides of what a real hospital is are absolutely necessary for the furtherance of accurate, scientific work.

Finally, I might sum up all I have to say in a few words: study your hospital, study its particular needs, keep in mind the factors which determine whether a building in which ill people are cared for is a hospital or boarding house; do what you can now, and ever look forward to do better. Never be satisfied with your hospital. Satisfaction is mental stagnation. Be constantly on the alert for improvements. Seek new methods, new appliances, new blood to use the methods and appliances. Encourage the young, well-trained doctors to work in the hospital. Keep your garden weeded and encourage the rare flowers. It may cause some heartaches, even bitter feeling, for weeds have at times deep, strong roots. The hospital is a permanent institution and man's stay is brief. The institution and the patients must ever be uppermost in your minds. Fight constantly for advance so that you will not retrogress.

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The China Medical Board of the Rockefeller Foundation has completed successful negotiations for the purchase of the Union Medical College and Hospital of Peking, the price agreed upon being about $200,000. This hospital is said to be the largest and best equipped in China, and the medical school the only one recognized by the government as qualifying graduates for the practice of medicine. The college was formerly owned by the London Missionary Society and was supported by six missionary societies. It will be leased by the Chica Medical Board to 13 trustees, of whom 7 will be members of the board and 6 will represent the missionary societies which formerly supported it. Its support and endowment will be undertaken by the China Medical Board, and it will be a nucleus for educational and medical work in China to be undertaken by the Board. Dr. Butterick, Dr. Simon Flexner, director of laboratories of the Rockefeller Institute, and Dr. William H. Welch, professor of pathology in Johns Hopkins University, will sail for China early in August and remain there for some months to organize the work contemplated by the China Medical Board.

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The Haskins Hospital at Wheeling, W. Va., established twenty years ago by Dr. Thomas M. Haskins and conducted by him until recently, has gone out of business. The present abundance of both public and private hospital facilities in the city and the fact that the Haskins Hospital has always been operated at a loss are the reasons given for the closing of the institution, which was established at a time when hospital accommodations were badly needed. The Haskins Hospital had a capacity of fifty beds. About seventy-five nurses have been graduated from it.

# CURRENT HOSPITAL LITERATURE

ALBERT ALLEMANN, M. D., Foreign Literature.
*Army Medical Museum and Library, Office of the Surgeon-General United States Army.*

**The Speech Clinic at St. Thomas's Hospital.** The Hospital, London, 1915, LVIII, No. 1508.

The results of the first year's work for stammering children show a marked success, and the "Speech Clinic" has become a small but invaluable feature in the hospital's work. The children attend the clinic but twice a week, and although control is rapidly gained, the suggestion is made that daily treatment would give infinitely more speedy results.

**The Obstetrical Nurse.** Sara B. Rowen, R. N. American Journal of Nursing, 1915, XV, No. 9.

Reference is made to the intolerance so often found among nurses toward obstetrics, and the reason given is that they view it only from the standpoint of labor. A plea is made to give obstetrics its proper place in the category of nursing, and not rob it of its ideals. While acknowledging obstetrics to be a laborious specialty, stress is laid on the fact that it is replete with new problems, new interests and delightful associations and yields unusual compensations.

**London (Royal Free Hospital) School of Medicine for Women—Scholarship Given by Her Majesty, the Queen.** The Lancet, London, 1915, I, No. 21.

This scholarship, amounting to $250 a year for five years, is part of a gift to the queen from the wives of Freemasons to help members of the professional classes who may be in difficulties owing to the war. The council of the London (Royal Free Hospital) School of Medicine for Women will award this scholarship to a student who has passed the London matriculation examination or its equivalent and intends to begin a course of study next October.

**The South African Ambulance Hospital at Cannes.** The Lancet, London, 1915, CLXXXVIII, No. 4788.

South Africa, in spite of the recent rebellion and strenuous campaign in German Southwest Africa, has organized and equipped this hospital for the French Service de Santé. It has accommodations for 200 patients, is fully equipped for x-ray and bacteriological work, and has in addition to a staff of 3 surgeons, 10 nurses, 9 sisters, 6 dressers, 1 accountant, 1 secretary and 4 motor drivers, a fully qualified dental surgeon in charge of the dental surgery.

**Traveling School Hospitals and Clinics.** The Hospital, London, 1915, LVIII, No. 1512.

This "traveling school hospital" has a staff of two medical men, a dentist and a nurse, and operates in parts of Australia where there are no resident doctors or dentists. More than 2,500 children were treated during the first four months. The excellent results of this undertaking have led to the recent establishment of a traveling ophthalmic clinic. These institutions on wheels are the latest outcome of the advanced systems of state education in Australia.

**The Tuberculosis Problem and Section 1142 of the Penal Code of the State of New York.** S. Adolphus Knopf, M. D. New York Medical Journal, 1915, CI, No. 24.

Dr. Knopf estimates the annual deaths from tuberculosis in the United States to number 150,000, with a total annual financial loss of at least half a billion dollars, not including expenditures for hospitals, sanatoriums, clinics, dispensaries, colonies, preventoriums and other agencies devoted to the solution of the tuberculosis problem. He concludes this address, delivered before a meeting of the Committee on Birth Control, recently held at the New York Academy of Medicine, with the following statement:

"I do not know the penalty to be visited upon a physician who offends the majesty of the law as set forth in section 1142 of the penal code above referred to, but I am willing to take the responsibility before the law and before my God for every time I have been counselled, and every time I shall counsel in the future, the prevention of a tuberculous conception, with a view to preserving the life of the mother, increasing her chances of recovery, and last, but not least, preventing the procreation of a tuberculous race."

**Italian Pavilions and Barracks** (Padiglioni e baracche italiani). Riv di ingegneria san., Torino, 1915, XI, No. 6.

The author calls attention to the fact that the movable pavilions and barracks in use in Italy are mostly all imported from foreign countries, while very good structures of this class of buildings are manufactured in Italy. These structures are made of wood, are easily transported and put up. They have double walls, the enclosed air space insuring warm rooms during cold weather. The pavilions have rooms for 12 beds. The article is accompanied by a number of illustrations, showing various designs for small hospitals, isolation pavilions and open-air schools. Similar structures are also put up intended to serve as bathhouses, kitchens, etc.

**Temporary Barracks on the Grounds of the Wilhelmina Hospital at Amsterdam** (Nood-barakken op het terrein van het Wilhelmina-Gasthuis te Amsterdam). Dr. J. Kuiper. Ziekenhuis, Amst., 1915, VI, No. 2.

At the beginning of last August it was greatly feared that the city of Amsterdam would have to stand a siege and the authorities had to seriously consider the question of taking measures against infectious diseases, which under such conditions form one of the chief public dangers. The board of health decided to erect nine barracks for patients and five double barracks for the personnel on the grounds of the former Wilhelmina Hospital. Each barrack was built for 40 patients. Between each two barracks there is a distance of 10 meters, which was thought sufficient to isolate smallpox patients. To lessen as much as possible the contact between the personnel of the various barracks the entrances of all the buildings were made on the same side. These temporary barracks were erected in ten weeks at an expense of 102,593 florins ($43,600).

**Reeducation as a Factor in the Treatment of Dementia Præcox.** Edward F. Leonard, M. D. Interstate Medical Journal, 1915, XXII, No. 6.

The Jacksonville State Hospital conducted a school for the reeducation of dementia præcox patients covering a period of five years. A moderately violent ward was changed to one of the best in the hospital, and many of the patients showed sufficient improvement to be allowed

to return to their homes. The "teacher patient" was discharged as cured and has been earning a good living for his family for several years. Dr. Leonard gives an interesting account of the small beginning, slow progress and ultimate gratifying results of this experiment to emphasize the feasibility of reeducation as a factor in the treatment of these patients, comprising about one-third of the inmates of our state hospitals.

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**Antitubercular Institutions in Italy: The Open-air School at Bergamo** (Istituzioni autitubercolari italiane: La scuola all' aperto a Bergamo). Tubercolosi, Milano, 1915, VII, No. 7.

A few years ago a teacher of the public schools took his class from a dingy, unsanitary school room out on the splendid old city ramparts. All the children belonged to the lower classes, many were sickly and predisposed to tuberculosis. Teaching in the open air had a remarkable effect on these children. They behaved better, were more diligent and at the end of the school term passed a better examination than at any time before. But more important is the fact that the children looked much better and enjoyed far better health than in their former dingy surroundings. These favorable results induced the city authorities to establish special open-air classes for weakly children and those predisposed to tuberculosis. A large open pavilion was erected for this purpose. For children who live at a distance the city pays the street car fare. A lunch for all the pupils is furnished at public expense.

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**Radioscopy With the Third French Army.** A. W. Mayo-Robson. The Lancet, 1915, CLXXXVIII, No. 4783.

Lieutenant-Colonel A. W. Mayo-Robson, R. A. M. C., C. V. O., F. R. C. S., recently visited France for the purpose of installing the Urgency Cases Hospital, and gives an interesting account of the excellent arrangements for carrying out radioscopy in the scattered hospitals near the front. The outfit consists of a van body, divided into two compartments, the inner a completely equipped photographic dark room for developing x-ray plates, the remainder ingeniously fitted to carry all required appliances and stores. This van is mounted on a powerful motor chassis, and one of these "radiologic automobiles" can thus do the radioscopic and radiographic work for a considerable number of hospitals, where a permanent installation would be impracticable. The electricity for the x-ray work as well as for lighting the interior and exterior of the car is generated by a dynamo driven from the motor.

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**Hospitals and Hospital Physicians in France** (Ueber Krankenhäuser und Krankenhausärzte in Frankreich). Dr. P. Schober. Reichs- Med.-Anzeiger, Leipzig, 1915, XL, No. 4.

All the public hospitals of Paris are under the administration of the Assistance Publique de Paris, which has its offices in the center of the city near the Hôtel de Ville. There are about thirty large and small public hospitals in Paris, of which the Hotel Dieu, the Hôpital St. Louis, the Charité, Pitié, and Salpétrière are the best known. Each hospital has several completely independent divisions of about 100 beds each. Thus the Hôpital Tenon has eight "services" for internal medicine, three for surgery and one for obstetrics. The Assistance Publique is intimately connected with the university. The university clinics are merely hospital divisions, for which the Assistance Publique furnishes a lecture room and a few laboratories. The university professor is necessarily also a physician in the service of the Assistance Publique. Until ten years ago the nurses at the public hospitals were sisters of charity, but when the separation of church and state was carried through they were replaced by secular nurses and the Assistance Publique has established a school, where girls are trained for the profession of nursing free of charge.

The Assistance Publique does not supervise the hospitals alone; the care of the old people, the incurables and cripples and the foundling houses stand under its administration. For these latter purposes no less than 15,000 beds are at its disposition.

From this it is seen that the Assistance Publique de Paris is a powerful institution. It employs more than 1,000 administrative officers, 8,000 nurses and 2,000 permanent laborers. There are 270 public physicians, more than 350 assistant physicians (interns) and 1,000 externs at its service. It spends about 70 million francs ($14,000,000) every year. Only a small amount of this sum is collected from patients, as there are few pay patients in the public hospitals of Paris. The institution is supported by large endowments, which have been established in the course of centuries. A certain percentage of special taxes and fees are also set aside for the hospital service. Besides the public hospitals Paris has a great number of other institutions which have their independent administration. Among these may be mentioned the Hôpital Pean, the Isaac Pereire Foundation, the Rothschild Hospital and a few hospitals owned by the Catholic Sisters. There is also an English and an American hospital in Paris. Finally there should be mentioned a great number of private hospitals, where the patients pay from 25 to 100 francs ($5 to $20) per day.

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**Hospital Efficiency From the Standpoint of Hospital Trustees.** Walter Wesselhoeft. Boston Medical and Surgical Journal, 1915, CLXXII, No. 21.

Hospital trustees' responsibility, today, is held to be distinctly for efficiency in administration, but the prediction is made that the time is not far distant when they must cease taking for granted efficiency in the wards. The questions are asked, "are the trustees in any way prepared to keep a watchful eye on the efficiency of the staff?"; "is it called for and is it possible?" The real meaning of such a step is briefly stated to be the application of "methods for the elimination of error and of comparative therapeutics." While fully cognizant of the extreme difficulties in the path of such a reform, the belief is expressed that sooner or later the profession will awaken to its need, and the first move should be the "framing of rigid rules and their faithful observance both of control and record."

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**The Children's Hospital at Verona** (L'ospedale dei bambini a Verona). Rivista ospedaliera, Roma, 1915, VI, No. 3.

This new hospital has just been completed. It is located in healthful, beautiful surroundings, on a hill north of the city of Verona. The hospital consists of five large buildings. The first three are connected with each other by spacious glass-covered corridors and subterranean galleries. The first pavilion is a two-story building. The first story contains the reception room, a waiting room for the public, a room for diagnosis, a hall for orthopedic gymnastics and rooms for the surgical and medical clinics. Two stairways lead to the second story, which is divided into two sections. One contains the administration offices and dwellings for the physicians, the other the medical library, rooms for chemical analysis, microscopy, etc. There is also a small juvenile library for the little patients.

The third pavilion is the largest and most important. It has also two stories. The lower story is devoted to surgical, the upper to chronic internal diseases. In the central portion of the building are several rooms containing 12 beds each. There are also several smaller rooms

with one or two beds each for patients with contagious diseases. This pavilion has two vast terraces for the children who are not able to go down into the gardens. The two other pavilions, which are not connected with the three first ones, are intended to receive the patients with diphtheria, scarlet fever and measles. They are built on the same plan as the former. This new children's hospital is said to be the finest and largest of its kind in Italy.

**Hospitals in Egypt.** Dr. F. M. Sandwith. The Nursing Times, London, 1915, XI, No. 527.

The cholera epidemic in 1884 brought to light the terrible unsanitary conditions of hospitals and the barbarous treatment meted out to the insane in Egypt. Dr. Sandwith found institutions swarming with vermin and mentions one hospital with its kitchen in close proximity with cess-pools, whilst the only available water had to be carried upstairs in goat skins. The insane were often left naked, beaten, half starved and some were burdened with heavy chains at wrists and ankles. A new sanitary department was organized that immediately insisted on the abolishment of barbarous treatment of patients and the inauguration of reforms in sanitation and equipment. Egypt now has an Institute of Hygiene, and twenty-four hospitals with dispensaries and bacteriological laboratories.

**Psychopathic Hospitals and Prophylaxis.** Franklin E. Williams, M. D. Boston Medical and Surgical Journal.

The laws on the statute books of Massachusetts providing for the temporary care and voluntary admission of patients in the early stages of mental disease have not proven efficacious outside of the metropolitan district of Boston. Lack of proper facilities in the immediate neighborhood and misconceptions of the purpose, action and class of patients advantageously served by these laws on the part of the general practitioners render them incapable of serving the splendid purpose for which they were conceived. Dr. Williams suggests that psychopathic hospitals should serve as prophylactic and educational centers to which those suffering from psychoneurosis and the early stages of mental disease could be taught to come freely and without prejudice for advice.

**Care and Treatment of Tuberculous Patients in Public Hospitals** (Ueber die Unterbringung und Behandlung der Tuberkulösen in öffentlichen Krankenanstalten). Dr. N. von Jagic. Oesterreich. San.-Wesen, Wien, 1915, Beiheft No. 3.

Austria has very few tuberculosis sanatoriums where patients with small means can be treated. It is therefore necessary to care for such patients at the public hospitals. This is of course wrong, but it is hoped that the future will bring changes in this respect. In the meantime the hospitals can do much, by proper organization, to mitigate the disadvantages of these conditions. Isolation of patients with pulmonary tuberculosis is an absolute necessity. Though the infection in most cases takes place in early childhood, infection of adults in hospitals is not impossible. Phthisics in the end stages must also not be left in the tuberculosis ward. They should be placed by themselves in a small room to save the other patients from the depressing sight. For tuberculosis patients those rooms should be selected which have the most air and the most light. The treatment of tuberculous patients in a public hospital in the center of a great city can never be very efficient and cannot compare with the open-air treatment of sanatoriums. Among the methods of treatment tuberculin therapy is still the most useful.

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# DEPARTMENT OF NURSING

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## Progress in Nursing[1]

BY HARRIET LECK, R. N.,
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It is a simple law of human development that people get on sanely and soundly only about as fast as they grow in likemindedness, in ability to *feel* and *think* and *act* together. From age to age progress has been made only as the world has renounced its independence and taken on bonds.

Just so it must be with any real progress made in the profession of nursing. We must determine to renounce some of our pet schemes, perhaps, in order to work for the greater good of all concerned. In other words, we must bear and forbear with each other as individuals and as organizations if we would ultimately reach the greatest number of people with the most good.

At this particular period of the world's history the nations are looking upon the nursing profession with new interest, and it might be well for us to pause and think. For, even as in the Crimean war, this may mean much in the advancement of our profession; and we are reminded of the secret of the wonderful influence of our founder, "The Lady of the Lamp." In trying to show the nurse "of how much use, unawares to herself, may be the simplest word of soothing, of comfort, or even of reproof," she says, "if she wishes to do this she must keep up a sort of divine calm and high sense of duty in her mind—this is the spirit of prayer which leads us in all our nursing silently to think of Him and refer it to Him." There was no secret about Florence Nightingale's religious spirit. I would ask how much of that same spirit are we putting into the solution of our problems today? Each individual, committee or organization has its own opinion of the solution of some problem, all working separately, perhaps, and failing to see any good in the other's solution. Isn't it quite time for us to get together, to feel and act and think together, to feel our dependence on each other?

As heads of hospitals and training schools we have yet many momentous problems. It is well for us to "make haste slowly," to ponder and weigh what the outcome may be, to take a broader outlook and await developments, to cooperate.

The classification of nurses and training schools has been studied, and much valuable time and energy have been given to its solution by many of the brainiest men and women of our associations. Its wise and just solution is tremendously important to special and struggling hospitals. The solution of this problen will come in the next few years, no doubt, when we are ready for it, so why worry about it? Why not await developments? These conferences should mean much towards its solution. Within the next ten years it will work out its own salvation in a perfectly sane way and we will look back and wonder why we were so "stirred up" about it. Many difficulties will vanish when the "get-together" spirit prevails.

The primary aim of a hospital is the care of its patients. Is this fact ever lost sight of by the red tape of the administration? The ever increasing demands of service in the hospital have thrown a greater burden on the school. The schools have tried to meet the demands placed upon them by extending the course of training, by the reduction of duty hours, by placing the instruction in the hands of salaried instructors, etc., all of which has contributed to bring the schools to a standing equal to that of schools of medicine, law, pedagogy, music, etc. These schools are endowed and do not bring in any income. Why should schools for nurses?

It is upon the economy and efficiency of the training school for nurses more than any other department that the reputation of your hospital depends. Dr. Hurd recently said that a well conducted training school should be a source of expense rather than a source of income. The authorities of training schools frequently take a one-sided view of their department and have too circumscribed an outlook.

On the other hand the superintendent of the hospital, in the multiplicity of his or her duties, frequently takes too narrow a view of the value of the broad training of the pupil nurse. He perhaps is inclined to blame the nursing department for something that could be remedied only by more instruction, more supervision or more nurses. He perhaps has not the time to look into some proposition, but throws it aside and says it is of no value or that it is too expensive, when careful consideration and time spent on it might lead him to not only look with favor upon its adoption, but to realize its value later to the reputation of the hospital as well as in dollars and cents. There can be no progress made in this instance without the cooperation of both individuals, the careful consideration by each of the other's opinion, the dependence on each other and the learning to act and think and feel alike on these vital things which mean so much to the progress of the school as well as to the hospital—the school dovetailing into all administration work and both cooperating for the good of the patient.

The lack of supervision of pupil nurses is a waste to any hospital or training school. The workmen of any large business concern have very careful supervision at all times. Is it any less important where life and death are at stake? In a discussion at the last convention of the American Nurses' Association the suggestion was made that there should be one graduate nurse to every eight pupil nurses. This ratio may be too high, but is it economy to place a pupil in charge of a ward of from twenty-five to thirty patients and expect the work to go on smoothly at all times, when nine out of ten nurses have not the necessary executive ability to manage that number of patients and the work entailed, to say nothing of watching the work of the other nurses?

The strict adherence to a preliminary term for probationers is economy. At first this was met with disapproval; now no training school of any standard is without it because its value has been tested, tried and proven. Pupil-specializing is an economy because it adds to the training of the nurse and to the reputation of the hospital, which naturally follows.

The class schedule of studies taught by a paid instructor is an economy because it teaches the nurse the technical part along with the practical, thus resulting in intelligent

[1]Paper read before the Seventeenth Annual Conference of the American Hospital Association, San Francisco, June 22-25, 1915.

care being given the patient. The nurse who is interested enough in her studies to be on the "honor roll," with very few exceptions, carries her knowledge and interest into the sick room and makes nursing a fine art.

But what are we preparing our nurses for? This might well be classified by what the three great organizations of nursing, with which we hold a joint meeting, represent—The American Nurses' Association, which is the alumnæ of our schools; the Educational League of Nursing, which is the institutional worker; and the National Public Health Nursing Organization, including the school nurse, infant welfare nurse, tuberculosis nurse, social service nurse, etc. Now the alumnæ of our schools are three-fourths private-duty nurses. This ratio may be a little high, since the public health nursing field has grown so rapidly, but the training applies to both. How are we preparing them for their field of work? The answer comes by looking at our graduate-special nurses in our hospitals. Are we satisfied with our own product? If we find it so hard to deal with these nurses in the hospital, how are they getting along in the home? How economical are they with supplies? How well do they adapt themselves to the patient, family, servants, etc.? Why do so many patients, who are able to pay for a graduate nurse, not want one? The trouble lies chiefly in the fact that the average graduate does not know how to make a home; she lacks the home spirit; she does not know enough of nursing ethics; she has not studied the law of human kindness, of unselfishness, of bearing and forbearing. How much of this spirit is generated in the training schools? In other words, how much real motherly, "homey" interest do we take in our nurses? Getting the work done thoroughly and the class work attended to is our chief concern. The *spirit* is *first*, and if that is taken care of the rest follows without any trouble. We get the "cart before the horse." I fear that is what is the matter with our private duty nurses. Not long ago a prominent doctor said to me, "Deliver me from a nurse whose God is her salary, who can see dirt outside the sick room and not lift her hand to obliterate it, who would not stoop from her professional work to lift a crying child or relieve a tired mother." The majority of our pupils come from well-regulated Christian homes. They are literally thrown into the cold routine stream of hospital atmosphere. How can you expect them to swim safely ashore amid the temptations without careful watching of all sides of their make-up, the mental, moral and spiritual. Now, I do not mean that we should preach religion, but I do mean that we should generate an influence of justice, of right living and high thinking, of interest, sympathy, unselfishness, of love in its true sense—is there any greater essential in the building up of home life? The school and hospital should be literally saturated with this home spirit.

If we make inquiries of our central directories for nurses we find that comparatively few nurses register for communicable diseases because they do not care for that line of nursing. Why? This training need not be neglected because most schools are available to a hospital of that kind and can obtain that training by affiliation. The same is true of the nursing of nervous diseases. A certain amount of handicraft should be taught in every school to be taken advantage of in a long convalescent period, in the nursing of children, for their amusement, and in diverting the mind of a highly nervous patient. These are not new suggestions, but I would call them to your attention because they are points in which much progress could be made in the care of the patient, which is our first consideration. Statistics show that the average stay of our patients in the hospital is 13½ days. Patients are rushed in and rushed out to make room for others. There is none of the good old-fashioned convalescent period for our nurses to get training in. As a result they do not like the long cases or the chronic cases, for when the short period of operation or acute illness is over with the nurse no longer wants to remain, but gets restless and very unhappy because she has not had the importance of careful nursing (of a different kind, perhaps, and yet fully as important) during the period of convalescence called to her attention, nor has she had any experience with such cases in her training.

One of the most marked signs of progress in nursing, as a whole, is the change of attitude toward nurses of different localities and schools. Ten years ago nurses graduating from a certain training school considered themselves much better, perhaps, than graduates from a neighboring school. State registration working toward a uniform curriculum has greatly aided in stamping out this narrow view, and the local leagues of nursing education have brought the principals of nurses together to discuss the problems common to all and encourage a social aspect, thus aiding in friendliness. Isabel McIsaac did more, perhaps, than any other one person during her term as Interstate Secretary to bring the nurses of the East and West together, making each broader minded. This leads up to a consideration of the institutional nurse.

In a book on Nursing Ethics, written in 1903, Isabel Hampton-Robb said that some one asked that she recommend a head nurse, and after enumerating at length the qualities she must possess to be successful, he concluded with the words, "in short, we require an intelligent saint." Not many days ago I received a letter asking me to recommend some one for surgical nurse in a small hospital, and the doctor after stating the salary and outlining the work said, "I am particular about the type of young woman we get, as well as about her qualifications for work." Are we always as particular as we might be along this line, or do we frequently consider her qualifications for the work only? In my brief experience I have found that some drawbacks to institutional workers are—first, unwillingness to take any more responsibility than is absolutely necessary, especially by a tendency shown to shirk responsibility in the training of nurses; second, lack of respect for authority, loyalty and honesty; third, tendency to too narrow a view or outlook. "Well, I get so tired of telling them over and over," we hear her say. That is what a supervisor is for. Mechanical routine work accomplishes small results. There must be a live interest with thorough demonstration and with alert, watchful supervision on the part of each and every member of a training school faculty, carrying the responsibility of the training of each nurse under her and giving personal attention—studying to bring out the very best that is in her and thus receiving the best service from her.

Where the lack of respect to authority, loyalty and honesty exists the school has a very weak link in its chain. It is possible to inspire these in some, but in others it might well be said that they do not know the meaning of the word. The success of the training school depends upon how much leeway the superintendent has to choose her own faculty, and her ability to pick congenial women who have been well trained in the above qualifications. Women, as you know, are blessed with intuition, and it does not take very long for the influence of one member to lower the tone of the whole school.

With regard to the last point—nursing is too fine a profession for us to allow ourselves to see only our own little corner, and unless we seize every opportunity of association we are neglecting a great opportunity, not only for

our own advancement, but also for helping others. We surely cannot afford ever to grow narrow or selfish or to allow ourselves ever to think of our work as a trade and not the highest profession.

Last, but by no means least, we have the nurses represented in the Public Health Nursing Association. It is needless to relate the great strides of advancement made by this association since its organization three years ago, nor to remind you that ten years ago this line of work was hardly known. The summary of all the qualities of the private duty and the institutional nurse is necessary to the successful public health nurse, no matter what department of that work she is in.

In conclusion, I would urge unselfish devotion to the love of humanity and a realization that just in proportion that we put self first we lose in true progress.

"What does it matter who sang the song, if only the song was sung?
What does it matter who did the deed—be he old in years or young?
What does it matter who ran the race, so long as the race was run?
And why should the winner be proud of himself because it was he who won?

"The one who ran and did not win, did he not do his best?
If he ran to the measure of his strength, what matters all the rest?
If the song was sweet and helped a soul, what matter the singer's name?
The worth is in the song itself and not in the world's acclaim.

"O hearts bowed down with sense of loss because ye did not win,
If ye ran your best (I say *your best*), you, too, have 'entered in.'
The Song, the Race, the Deed are one, if each be done for *Love, Love of the Work* (*and not love of self*), and the score is kept Above."

## Effect of Legislation Upon Schools of Nursing in California[1]

BY ANNA JAMME, R. N.

The California legislature of 1913 enacted two laws governing training schools for nurses in this state: the Nurses' Registration Act and the extension of the Eight-Hour Law for Women to include student nurses. The former was initiated by the California State Nurses' Association, the latter by the Labor Council of the Federated Trades organization of San Francisco.

The act providing for examination and registration of nurses, administered by the State Board of Health, and the law governing the hours of duty of the student nurse, administered by the Bureau of Labor Statistics, are distinctly independent of each other in the method of administration, but very closely related in their operation.

The administrative machinery of the Nurses' Registration Act is a department under the State Board of Health, in charge of a director, who is a registered nurse. This is in accordance with the organization of the State Board of Health, which consists of seven bureaus, each in charge of a director. The law provides that the director shall perform all duties required by the act, including inspection of training schools. The requirements for examination as specifically outlined are that a nurse shall be a graduate of an accredited training school. The requirements of the school are not mentioned, other than that it shall be attached to, or operated in connection with, a hospital or hospitals giving a general training and a systematic, theoretical and practical course of instruction.

Upon this basis the State Board of Health outlined definite requirements from which the schools could arrange their schedule of instruction. An inspection was made of every training school in the state and most hearty cooperation in the work was found to exist. Many small schools are scattered throughout California, in the rural districts, where a hospital is essential, and in these schools, frequently, very excellent instruction is carried out. In several affiliation with larger hospitals has been arranged for the purpose of giving the student a broader experience in bedside instruction.

It is interesting to note that soon after the passage of these laws fifteen hospitals closed their training schools of their own volition. No steps had been taken by the State Board of Health, which preferred to allow every opportunity for the schools to raise their standard before taking action.

The general effect upon the schools may be briefly stated as follows: in schools maintaining standard courses of instruction, little or no change; in schools below standard, the curriculum was enlarged, instruction systematized and brought up to official requirements. Text-books have been adopted where it was found that none were used, and in cases where no class equipment was supplied, not even a blackboard, an effort is now made to furnish the necessary facilities for class demonstration. In about twenty-five percent of the schools special instructors have been added, and in fifty percent a course in dietetics established. In many special diet kitchens have been provided and equipped for the purpose of class instruction.

One result of the law has been an accurate and systematic method of keeping the records of the student's theoretical and practical instruction. The Bureau of Registration supplies the school with printed forms, to be filled out by the superintendent of nurses on the completion of the course of each student, and this record is forwarded to the bureau and kept on file. It embraces the number of lectures and classes attended in each year, the rating on examination of each subject, the amount of practical experience in each department of the hospital and the record of efficiency. This has stimulated the schools to keep records in a methodical manner and it enables the bureau to obtain exact data of each graduate and also to be constantly in touch with the class of instruction given in every school.

It may be said, therefore, that the effect of the law upon the individual student is a matter of personal concern. From the day she enters school she has constantly before her the fact that she is preparing for an examination by the state, and that during every day of instruction, whether in class, at the bedside, in the operating room, or in any branch of service, her general standing is a matter of record. It is hoped that in the near future the student's record in training will be given a definite credit value in her state examination.

The relation of the Eight-Hour Law to the Registration Act has been noteworthy. By the systematic arrangement of eight hours of duty each day a certain portion has been set aside for study. The opportunity thus given for preparation of class material has produced a marked change in the character and results of class instruction. Medical lecturers, who have been questioned generally on this point, unanimously agree that the students show far more interest and are able to grasp the subject-matter with greater facility in the absence of the physical and mental fatigue which characterized the classes before the passage of the law. Under the system of longer hours of duty it would have been impossible and even ludicrous to insist upon the minimum requirements of lectures and classes as now laid down by the State Board of Health.

Notwithstanding its present permissive form, the Registration Act in the very brief period of its existence has demonstrated the value of state control of training schools. The impetus given by the large number of nurses (4,872) registered during the first year is, in itself, a guarantee for the future and of what may be ac-

[1]Read before the Annual Conference of the American Hospital Association, June 22-25, 1915.

complished by students who desire the recognition and special certificate of the state.

It has been gratifying to observe the number of recent graduates who have availed themselves of the two examinations so far held by the State Board of Health. At the first examination in Sacramento, December 5, 1914, five months following the close of the waiver, forty-seven applicants presented themselves for examination, and of this number eleven came from the southern part of the state, which entails an expense for each of at least forty dollars. In the examination held in Los Angeles on May 1, 1915, eighty-six were present, twenty-five having come from the northern part of the state at a like expense. This demonstrates the value the young graduate places upon registration. From data on file in the bureau one hundred and twenty-eight students have been graduated since December 1, 1914.

Viewing the inauguration of this work from the headquarters of the bureau at the capital convinces me that administration of a Nurses' Registration Act by the State Board of Health has been eminently satisfactory. The close relation of the modern nurse to preventive medicine as well as to medical science presents a natural affiliation. Control and direction by an independent authority having a close and sympathetic interest has avoided friction and prevented strife. The policy of the State Board of Health has been one of generous and helpful assistance, criticism and condemnation being avoided. By an intelligent, friendly, and, at the same time impartial attitude, the good-will and support of those concerned has been secured.

The readjustment of educational ideals, notable in vocational training, presents an opportunity for training schools in this state that is unprecedented in the history of nursing. Everywhere the trained and specialized woman is in demand. The scope and activities of the trained nurse are no longer limited to the hospital and the home, her education and training are extending to far wider fields. The time has arrived when the training schools of the state should be in line with other vocational schools and the training of a nurse placed on a parity with the training of a teacher.

The effect of legislation providing for the extension of the Eight-Hour Law for Women to include student nurses has been momentous. It was immediately necessary to increase the number of student nurses in each hospital at least one-third and to arrange a working schedule for the hours of duty, to cover seven hours each day for six days, and six hours for the seventh day, or to arrange that one day in seven be free. It was also necessary that a similar schedule be arranged for the nights of each week. This was found difficult in the majority of hospitals, especially in the operating and maternity departments, where the work could not be regulated according to any definite and circumscribed time. Even in the best regulated and well-ordered hospitals a certain amount of confusion results owing to the frequent change of nurses.

One physician has stated that a patient requiring throat applications received the attention of seventeen different nurses in twenty-four hours for this particular service. Another instance is that of a school teacher in a hospital ten days, because of an attack of pneumonia, who, on leaving, desired to show her appreciation of the services rendered by the nurses. She requested the superintendent to furnish a list of those who had been in immediate attendance during her illness, as she wished to give a little party for them. The list showed that thirty-six nurses were eligible for the party.

All special nursing by student nurses has been discontinued and placed in the hands of graduates. An exception to this is found in the hospitals controlled by the Seventh Day Adventists, where three students are detailed for continuous twenty-four nursing and the patient pays the same amount as for one graduate nurse, namely, twenty-five dollars per week. Nursing in contagious diseases has been interfered with to some extent. Where a contagious department is connected with the hospital it has not been found practical to detail three students on a case, thereby weakening the general nursing staff.

Interference with continuity of work has been keenly felt by the smaller hospitals in the rural districts, where this is largely of the emergency type and where pressure may exist for short and intermittent periods. The compulsion of leaving duty, often at a moment critical to the patient and of great value, instructively, to the nurse, is of very serious import. Upon the student nurse is placed the necessity of very close observation of her time of daily service and of measuring that service more by the clock than by the exigencies of duty and the quality of her work. One institution has installed a time clock and makes it compulsory for all nurses and female employees to punch it on time. It has been repeatedly stated that students have informed the superintendents that their time was up when asked to perform some immediate service for a patient. The superintendent was helpless in insisting that this should be done, owing to the fact of an alien authority in her school controlling this part of her responsibility and prerogative. In many instances the spirit of the work has suffered greatly and the student has become mechanical, especially where the law has been kept in unpleasant prominence.

The utilization of the leisure time has called for serious consideration. In schools where none, or at best poor, provision, is made for the social and intellectual life of the student, this time is apt to be spent on the streets, in cafes, "shows," or elsewhere. On the other hand, where schools provide comfortable and attractive living rooms, study rooms, libraries, tennis courts, and arrange for a certain amount of social entertainment, the student finds her recreation in the nurses' home and surroundings and does not wander abroad unduly for necessary diversion.

No special data have been obtained concerning the effect on the health of students by the provisions of the law. The general health of the schools is affected by causes other than length of hours. Housing conditions, food, service, methods of discipline and the school atmosphere are controlling factors. While excessive hours of duty, often under great strain, is a most vital contributory cause, it should not be considered to the exclusion of other factors in estimating the health standard of the student nurse.

It is significant that all schools are reporting an increase in the number of applicants and more generally from women of good education and general preparedness.

The effect of the law upon hospitals is in turn having a distinct influence upon the school. The increase of students and the decrease of revenue from the special work of the student nurse has seriously affected the finances of the hospitals. In a paper on this subject read before the American Nurses' Association in April, 1914, Miss Lila Pickhardt, superintendent of nurses of the Pasadena Hospital, says: "Just how great this revenue was may be estimated when we have reason to believe that in some institutions forty percent of the nurses were on special cases. Frequently probationers were assigned to special duty and some have estimated that two-thirds of the time while enrolled as student nurses was given to special duty."

Upon the superintendent of the training school has fallen the burden of adjusting conditions to meet the requirements of the law. It is remarkable to see with what spontaneity each superintendent arose to this demand and worked out the problem of fitting herself to meet emergencies under the limitation of an eight-hour service in one day or night and forty-eight hours in one week.

The penalty clause has been in abeyance since the passage of the law, owing to the question of unconstitutionality brought up in the courts of California by means of a test case. The case was ultimately taken to the Supreme Court of the United States and a decision was rendered on February 23, 1915, of which the following is a summary: "The same restriction as to the hours of employment of student nurses in hospitals is not an unconstitutional violation of the freedom of contract, as these persons, upon whom rests the burden of immediate attendance upon and nursing of the patients in hospitals, are also pupils engaged in a course of study, and the propriety of legislative protection of women undergoing such a discipline is not open to question."

During the recent session of the legislature an amendment was initiated by a group of hospitals, with the object of providing for three months' special nursing in the third year of the course. While this was introduced as an amendment to the Nurses' Registration Act, it left the power of enforcement to the Bureau of Labor Statistics. It was defeated on the ground of incompatibility with the Registration Act and that it was an endeavor to utilize the student nurse as a source of revenue to the hospital during this period.

It has long been apparent to all intimately concerned in the training of nurses that the old method, transmitted by custom, of long hours of duty to test the endurance of a nurse, will not now suffice. The period of the survival of the fittest has passed. Many a fine woman has been lost to the school, to the profession and to the state because she could not measure up to the test of physical endurance. Furthermore, we know full well that many would have been attracted to the training school had reasonable working hours prevailed.

Science has revolutionized medicine and philanthropy as well as industry and warfare and has given us new standards and new viewpoints. These standards are influencing and forcing readjustment in all branches and they have extended to the education of the nurse. The present is a period of acute transition in training schools and in this transition there is a conflict of opinion, and in many cases an overtaxing of the power of adjustment. This is inevitable because of the complex character of the relation of the training school to the function of the hospital. Methods for the conservation of the health of the student nurse have been employed on a basis of the methods used for workers in industry. This presents the difficult problem of the adaptation of the inflexible rules of industry to the varying conditions of work which prevail in hospitals.

It is not impossible that the ultimate solution of this problem will be found in evolving a flexible scheme which shall meet the specific needs of the training school and of the hospital. This scheme should insure, not only the safeguarding of the nurse from unduly long hours of duty and from the dangers of exploitation, but should enable her, under favorable conditions for her intellectual and technical growth, to secure the training which modern social conditions demand.

In closing this brief recital of California's part in fostering and uplifting our profession, I cannot escape the consciousness that at no time since the trained nurse first became a factor in our social economy could I have spoken of her calling with more dramatic coloring.

During the past eight months in Europe hundreds of nurses of every nationality have been performing unprecedented tasks and helping, amidst a hitherto unknown carnage, to achieve results that medicine and surgery had so far failed to accomplish. Even in their ranks there has been a high mortality. The greater deadliness of modern warfare has meant a larger measure of exposure, while the range of modern artillery has greatly extended the danger zone. The testimony of all nations is, that they have done their full duty "even unto the end."

As I write there comes before me a message of our President, fraught with momentous possibilities for American nurses. May I not quote the words of a great American: "They here gave the last full measure of devotion"? May we not "here highly resolve that these dead shall not have died in vain"? And for my sisters of California I say we are ready whenever and wherever our country calls on us for service.

## NEW HENRY FORD HOSPITAL OPENS

### Unit of 100 Beds Now Open—Eventual Capacity to Be 2,000—The Hospital Changes Name

The first unit of the large general hospital being erected at Detroit, Mich., by Henry Ford, the automobile manufacturer, has been completed and, according to plans recently announced, will be receiving patients by the time the August number of THE MODERN HOSPITAL is delivered to readers.

The construction of this hospital was originally started by an organization of citizens, which undertook to build it from private subscriptions, but was not able to secure sufficient funds to carry the work to completion. Mr. Ford took over the whole project, returning to contributors $400,000 which had already been paid in, and agreeing to complete the hospital at a cost of over a million dollars.

The unit just opened has a capacity of 100 beds. Dr. J. N. E. Brown, formerly for six years at the head of the Toronto General Hospital, and for three years secretary of the American Hospital Association, is in charge as superintendent. Dr. Angus McLean heads the surgical staff, and Dr. Frank J. Slayden the medical staff. Dr. James E. Mead, chief physician at the Ford Motor Company factory, will act as Mr. Ford's personal representative on the advisory board of the institution, which is to be known as the Henry Ford Hospital.

It is expected that the entire group of buildings, with accommodations for 2,000 patients, will be completed within the next year.

When asked recently whether the new hospital would engage in research work, Mr. Ford replied that the plan would be rather to try out the results of research work already done. "It is my one desire," said Mr. Ford, "to make this hospital a producer—one that will produce cured men, women and children in the shortest time necessary."

It is known to be Mr. Ford's intention to run his hospital for the benefit of the middle class of people. Prices will be moderate, yet every patient will have a private room.

The Ford physicians are at present observing the work of some of the hospitals in the East in treating patients addicted to drug habits, and it is said to be probable that a unit for drug victims will be built as a part of the hospital.

# PREVENTION OF TUBERCULOSIS

*Conducted under the auspices of*
THE NATIONAL ASSOCIATION FOR THE STUDY AND PREVENTION OF TUBERCULOSIS

**Education of Library Readers: A New Method of Attack**

One of the most original and interesting educational ideas that anti-tuberculosis workers have devised in recent years has just been perfected by the Anti-Tuberculosis League of Kenton County, whose headquarters are in Covington, Ky. The idea is the use of a series of eight attractive bookmarks to be placed in the hands of the librarians of public libraries, one bookmark to be inserted in every book that is given out for general circulation.

CLEAN BOOKS-
CLEAN MIND
CLEAN AIR-
CLEAN LUNGS
† The Anti-Tuberculosis League of Kenton County
DECLARATION OF WAR ON TUBERCULOSIS
A NEW CHAPTER
In the history of mankind is the war on tuberculosis A war to save life—not to destroy it.
† The Anti-Tuberculosis League of Kenton County
WHEN YOU READ
open the window and breathe the pure air
† The Anti-Tuberculosis League of Kenton County
READ
this startling fact. From One death in ten to One death in Seven is caused by Tuberculosis
THINK
† The Anti-Tuberculosis League of Kenton County

Figs. 1 and 2. Bookmarks issued by the Anti-Tuberculosis League of Kenton County, Ky.

Mr. William S. Groom, of Covington, the energetic volunteer executive secretary of the Kenton County League, is the originator of the idea. In talking over the distribution of books through the public libraries he learned that 80,000 volumes were circulated every year among the 60,000 inhabitants of that community, and he thought that this was a good opportunity to reach a group of people with a most necessary educational message. His problem was to devise some method which would appeal both to the librarians and to the readers of the books, since not every person who goes to the library is looking for education in tuberculosis. As a result of considerable thought on his part, he devised a series of bookmarks, the text of which has been very cleverly selected so that it will tend to stimulate not only the anti-tuberculosis movement, but the use of books in the library. Once he had secured the wording, some of which was taken from standard literature on tuberculosis, and some of which was entirely original, it was necessary to illustrate it in a striking manner within the brief compass of space allowed on such a device. In this he was ably assisted by Mr. Ralph H. Jones, of Cincinnati, to whom credit should be given for the cartoon ideas and for the general scheme of illustration carried out in the bookmarks as shown in the accompanying cuts.

THE GREATEST VOLUME
of deaths is caused by tuberculosis. Guard your health, keep your name from this volume
† The Anti-Tuberculosis League of Kenton County
TRASHY BOOKS
poison the mind, patent medicines poison the body GOOD BOOKS, FRESH AIR and PURE FOOD assure Wisdom and Health
† The Anti-Tuberculosis League of Kenton County
TURN OVER A NEW LEAF
—avoid the germs that thrive in darkness and dirt live in the fresh air and sunshine
† The Anti-Tuberculosis League of Kenton County
HEALTH HIGH SCHOOL
Fresh Air, Sunlight, Wholesome Food, Honest Doctors, Pluck
MARK
these facts. Fresh Air, Sunlight Wholesome Food, Honest Doctors and Pluck are enemies of tuberculosis
† The Anti-Tuberculosis League of Kenton County

Mr. Groom has made arrangements to have one of these cards inserted in every book that is given out from the Covington Library during the next year. Since there are eight in the series the tendency of most of the readers of the library, particularly the children, will be to endeavor to collect all of the eight, and the local league will do all it can to further the normal collecting instincts of the children.

The National Association for the Study and Prevention of Tuberculosis was so impressed with Mr. Groom's idea that, in cooperation with him, it has decided to make arrangements for the issuance of these bookmarks on a large scale. The Kenton County League has furnished to the National Association the original drawings and plates, and estimates have been secured from printers on large quantities. While no definite figures can be given until the first set of orders comes in, it is estimated that these bookmarks can be furnished for approximately seventy to eighty cents per thousand, or from $5.60 to $6.40 per set of eight in thousand lots.

The National Association will receive orders for these bookmarks in any quantity and will arrange to have them delivered at the earliest possible date. A sample set of the bookmarks will also be furnished on request.

The bookmarks are in two colors, red and black, and they present a much more attractive appearance than is shown in the accompanying illustrations. The National Association plans to print a line at the top of the card bearing some such wording as the following: "This card is one of a series of eight; collect the other seven." Arrangements are also being made for imprinting the name of the local association at the bottom of the cards, as indicated on the accompanying cuts. The cards themselves will be approximately 1⅞ inches wide by 5¼ inches long. They will be of light cardboard.

As designed, the cards are suitable for distribution not only in the libraries, but also in the public schools for the use of the children as bookmarks in their text books, and in almost every place where books are used. They can

also be used without referring to books. It is suggested, however, that those who order these bookmarks order them in series. The value of the cards is greatly enhanced in this way.

The National Association makes no profit from the sale of these cards other than an amount sufficient to reimburse itself for the price of the original plates and drawings, and such incidental expenses connected with the preparation of the cards as may be necessary. An effort will be made to get the lowest possible price from the printer for the benefit of those who wish them.

It is suggested that instructions with regard to imprinting accompany any orders that are sent in. Additional charge will necessarily be made for imprinting; the amount of this cannot be determined at this time. The address of the National Association is 105 East 22nd street, New York City.

### Admitting Patients to a State Tuberculosis Sanatorium

A state sanatorium for the treatment of tuberculosis should presumably serve two purposes, first, the treatment of the early, favorable case, and second, the education of these patients and the community at large as to the nature, curability and prevention of the disease. In Rhode Island Dr. Harry Lee Barnes, the superintendent of the state sanatorium at Wallum Lake, is making the institution perform a third function in educating the physician in the diagnosis of tuberculosis. In describing his work he says in the May number of the *Journal of Outdoor Life:*

"This plan [of a single examiner] has been modified in many states by having a sufficient number of examiners to cover thoroughly the state, thus avoiding the expense and inconvenience of travel on the part of patients. If reasonable care is exercised in appointing good men, this scheme is a workable one.

"This plan of having examining physicians, be they two or two hundred, is, however, open to the following disadvantages:

"First: Family physicians dislike to turn over to other physicians cases in which diagnosis and indications for treatment are clear, and this operates in many instances to delay the admission of patients.

"Second: The plan of relying on examiners produces a few experts in the diagnosis and prognosis of phthisis at the expense of the general practitioners who send their cases to examiners and rarely learn why one case is considered suitable and another unsuitable for admission. The cases of active tuberculosis in any state cannot be found originally by sanatorium examining physicians who merely receive cases from general practitioners and pass them on, but the cases must be originally detected by general practitioners. The education of a few experts therefore does little, while the education of the great body of the profession does much to detect early cases. In the states of Massachusetts, Maryland and Rhode Island (and possibly others) these disadvantages have led to the abolition of examining physicians and the admission of sanatorium patients through application blanks, which can be filled out by any licensed physician of the state. While it would be hopeless to expect all licensed physicians to become expert examiners when they handle on an average only a half-dozen cases of tuberculosis a year, yet when they begin to share the responsibility of admission, they begin to learn. They must fill out blanks, and in order to do this they must take histories, note symptoms, make examinations, and, in short, study cases more carefully instead of shifting the problems to state examiners. If they omit to give information on the blank as to the pulse or temperature, for instance, they are required to get this information, and they receive a letter from the sanatorium explaining its importance.

"In doubtful cases additional information may be required. If the case is rejected, the sanatorium explains why; and if, despite precautions, an unsuitable case is admitted, the physician is informed of it and how the mistake occurred. All this work educates physicians and stimulates early diagnosis and proper treatment of patients.

"What, then, shall be our method of furnishing physicians in general practice with information regarding their duties in handling tuberculosis?

"Of course the ideal would be a special book on tuberculosis in the office of every physician with the time and disposition on his part to consult it, but this is impracticable. Reading papers on tuberculosis before local medical societies is a favorable way. Such papers do some good, but the impression of a paper quickly fades from the minds of busy men. If the article is published in medical journals, or reprinted and sent to practitioners, more good results, but the medical journals are filed away and the reprints are soon mislaid or lost. These difficulties have led me to prepare a special article on tuberculosis to be printed on the back of each admission blank, which formerly contained only the classification of the National Association for the Study and Prevention of Tuberculosis and a few directions as to the cases desired and the method of making applications. As physicians keep these blanks on hand and must use them in order to admit cases, the information cannot be so readily forgotten, filed away or lost as are addresses, medical journals or reprints.

"At first I tried to make the article brief, say three to six hundred words; but I finally gave this idea up. What the general practitioner needs, when he suspects that he has a case of tuberculosis, is not something brief, but something which is complete enough to help him in puzzling cases, which will fully set forth the physician's duty to his tuberculous patient; something which he can always have on hand for reference. The result has been a summary more complete than will be found in ordinary textbooks, and yet one that can be covered in a half hour. If the physician mislays a blank, he can get another in two days and without expense. The division of the subject-matter into 24 headings allows the busy practitioner to look up any problem found under these headings in two or three minutes. The cost of printing these blanks was about one cent each. The blank comprises six pages, including the chart and statistical material on the first page."

The following list of headings will give some idea of the topics discussed: "A Task for the Medical Profession"; "The Importance of Early Diagnosis"; "The Frequency of Mistakes in Diagnosis"; "Physicians' Mistakes from the Patients' Standpoint"; "Beware of 'Colds'"; "Incipient Cases Appear Well"; "A History All Important"; "Diagnostic Value of Symptoms"; "Sputum Examinations"; "Physical Examination"; "Tuberculin Tests"; "Chronic Bronchitis Per Se Is Rare"; "Don't Postpone Diagnosis Too Long"; "Always Tell the Patient"; "Instruct Patients in Sanitation"; "Finding Other Early Cases"; "Home Treatment Is Playing With Fire"; "All Favorable Cases Should Be Sent to Sanatorium"; "Length of Stay"; "Cheer the Patient"; "Why Going to the Country is Not 'Just as Good'"; "The State Sanatorium Not for Far Advanced Cases"; "What Symptoms Indicate Far Advanced Disease?"; "What Should be Done with Far Advanced Cases?"; "Children"; "Vacancies"; "Typical Mistakes."

# PHILANTHROPY AND THE PUBLIC HEALTH

THE NEW YORK ASSOCIATION FOR IMPROVING THE CONDITION OF THE POOR.
BAILEY B. BURRITT, General Director.
WILLIAM H. MATTHEWS, Director,
*Department of Family Welfare.*
DONALD B. ARMSTRONG, M. D., Director,
*Department of Social Welfare.*

## SEEING IS BELIEVING

### How the Bureau of Food Supply Visualizes Food Values and Food Hygiene

BY HOLLAND HUDSON

The accompanying illustrations show the manner in which the Bureau of Food Supply of the New York Association for Improving the Condition of the Poor has organized an educational exhibit on behalf of clean food, pure food, and properly selected food. The exhibit was planned and directed by the bureau's special investigator, Miss Laura A. Cauble, from material supplied by the bureau and by the Department of Health of New York City. The theory of the exhibit is that the abstract terms of calorics, dietetics and even of the sanitary code mean little to the food dealer and consumer without graphic and succinct visual demonstration. Seeing is believing, because most people are "eye-minded."

The materials of the exhibit consist not only of photographs and diagrams, but of an actual qualitative and quantitative exhibit of food samples. For example, the whole truth about bread is graphically presented. Enlarged photographs show how bread is produced in both sanitary and insanitary bakeries, and the customer is urged to demand sanitary baking methods. A showcase demonstrates the degree of cleanliness and protection a purchaser has every right to demand from the merchant who sells the bread. The proper importance and proportion of bread in human diet is graphically illustrated by samples of various breads in 100-calorie portions, compared with 100-calorie portions of other foods. This 100-calorie portion exhibit also compares the costs of various food materials. Large charts illustrate the economical buying of meat. Altogether the exhibit teaches the housewife to make the family budget show the most nutrition for the least outlay.

Every fundamental material of diet is demonstrated in this threefold fashion. The subject of food supply is illustrated in its sanitary, dietary and economic aspects. The danger of bacterial infection of meats and other food materials, and consequent waste, is emphasized by photographs and by jars containing infected materials. Special emphasis is also placed on the proper handling of all foods in stores and restaurants. In this particular as in others, the exhibit is directed as much to the dealer as to the consumer. The dealer is shown what the sanitary code means and how to obey it. In addition to the photographic illustrations, inexpensive refrigerator showcases, approved by the department of health, are shown. The customer is taught to demand unspoiled and unfingered foods.

Fig. 2. How to buy the most nutrition at the smallest outlay. All jars contain the same amount.

Fig. 1. Flavor and color as shown in the Department of Health exhibit.

On another table the less essential but very popular flavoring materials are demonstrated. The customer is encouraged by an exhibit of common food adulterants and coal-tar dyes to consider for herself whether she wishes her foods pure or adulterated.

The entire exhibit is so organized as to bring home to the visitor these facts: (1) that one of the most important functions of the health department is to safeguard the public health as regards food supply; (2) that public health agencies are the friends, instead of the enemies, of food dealers in that they seek to eliminate unprofitable wastes; and (3) that it is up to the consumer to join public health agencies in demanding sanitary methods of food handling and also to select those foods which best sustain human life.

The exhibit is built to travel. It was originally shown at the College of the City of New York, where it interested a large portion of the student

body whose courses called for no special study of food supply or food values. In the first ten days in its second home in a congested and unprosperous section of New York's West Side, it translated the caloric standard of food values from a laboratory formula to a household convenience for about 2,000 people and gave the department of health aid in the enforcement of the Sanitary Code. Its itinerary already includes by request Greenwich, Conn., under the auspices of the Connecticut Research Association; the Washington Street Market district of New York and Brooklyn. Organized originally as a test of food-exhibit methods and possibilities, this exhibit has already far surpassed the most sanguine expectations, especially in its appeal to intelligent public interest and in its fruitfulness of result.

Fig. 3. Cheap and sanitary showcases at the exhibit.

### Greater Sea Breeze at Last

After almost constant litigation and legislation since 1907, the new seaside hospital of New York City, erected by the New York Association for Improving the Condition of the Poor, has at last been turned over to the city with accommodations for 138 children afflicted with non-pulmonary tuberculosis. It was for this hospital that "Smiling Joe" was used to such advantage during a financial campaign that extended throughout the country. Over $250,000 was realized at that time and the money has been held in trust until now. Practically all the money has been expended in the establishment of the institution. In turning over the hospital to the city, Cornelius N. Bliss, Jr., president of the association, says:

"The New York Association for Improving the Condition of the Poor," having completed the construction and equipment of a hospital for the sea-air treatment of children suffering from non-pulmonary tuberculosis, in accordance with its offer made in November, 1906, renewed in April, 1912, and accepted by the city, in resolution adopted by the Board of Estimate on July 15, 1912, is now ready to turn the complete structure over to the city authorities.

"The site upon which this hospital was constructed was withdrawn from the jurisdiction of the Park Board and conferred upon the trustees of Bellevue and Allied Hospitals, and we are accordingly notifying the trustees of Bellevue and Allied Hospitals that the structure is ready for immediate occupancy."

# PREVENTION OF BLINDNESS — MATERNITY

*Conducted by* CAROLYN CONANT VAN BLARCOM, R. N.,
*Secretary National Committee for the Prevention of Blindness; Chairman Committee on Infant Welfare, National Organization for Public Health Nursing.*

### What Nurses Can Do to Prevent Blindness

BY DR. ELLICE M. ALGER,

Professor of Ophthalmology, New York Post-graduate School; Member Committee on Conservation of Vision, American Medical Association; Director National Committee for the Prevention of Blindness.

The last fifty years have seen such an enormous increase in medical knowledge that even physicians are not able to keep abreast of the whole field, and we have seen the consequent development of specialties and sub-specialties. But we have made comparatively little progress toward realizing Pasteur's dream of abolishing all contagious diseases from the earth.

This failure of preventive medicine has not been the fault of the physician, for he has seen the possibilities of modern science. But for a quarter of a century he made the same mistake that all experts are likely to make, the mistake that reformers and sociologists and philanthropists are making today: of thinking that it is possible to accomplish lasting social results by the simple process of making laws. To this feeling we owe a host of sanitary laws which have not only been practically unenforced, but which have actually aroused resentment and opposition and distrust. We can see this same feeling every day in the public attitude toward organized charity and the great philanthropies, which are making the same fatal error.

Public education is the only sure foundation for public health. The patent-medicine man, sordid and mercenary as were his motives, was the first to appreciate popular interest, and he really started the public health movement by the frank talks in his advertising. In the days when a reputable physician would have been ostracised professionally for addressing a mothers' meeting, the patent medicine man was teaching his dupes that they had "organs" and "weaknesses," and while it has made them, perhaps, morbidly sensitive, it at last created a wide demand for honest and disinterested advice.

This has been true of diseases of the eye just as much as of tuberculosis and cancer.

Physicians have known for a generation or two how at least half of the blindness in the world might be avoided. But the hygiene and diseases of the eye constitute perhaps the most sharply segregated specialty in medicine, and most of the popular enlightenment has come down clouded by the ignorance of honest but untrained tradesmen, or colored by the frauds of the quack.

Some years ago the American Medical Association, to meet what it felt was a public need, organized a Committee on Conservation of Vision which has conducted illustrated lectures in practically every state in the Union,

and, through the organization's press bureau, reached millions of readers through their local newspapers. But there are manifest disadvantages under which any purely professional body labors, the danger of being too technical, too impatient, the lack of funds and full-time workers, and of late a new National Committee on Prevention of Blindness has been organized. It includes physicians, of course, but it aims to include also all who are interested directly or indirectly in the conservation of vision, men and women, physicians and laymen, employers and employees. Among those who, by training and purpose in life, are prepared to understand and aid in this great popular campaign, none stands higher than the trained nurse, while perhaps the most important part of the whole work deals with the period of infancy and children.

We are coming to recognize more and more the right of the child to be well born. This is a truism as applied to epilepsy and idiocy, and yet few are aware perhaps what an important factor heredity is in diseases of the eye. In such conditions as congenital cataract, retinitis pigmentosa, night blindness, and albinism, the element of heredity is so well marked that there is a tremendous probability that the children of an affected parent will be blind or practically blind. The element of consanguinity of parents is also a very important one, because it offers a

Fig. 1. This little girl was born with normal eyes. The midwife did not use prophylactic drops, nor was a doctor called when the child's eyes became sore. She pays the price of lifelong blindness for this neglect.

double chance of the child's inheriting any family peculiarity. One does not realize how frequent these conditions are except in an institution for the blind, where are collected, as in an eddy, this hereditary flotsam, children lacking one or both eyes, or some part of an eye; children with microphthalmus, or macrophthalmus, and all sorts of hideous congenital defects. To a less extent we are now beginning to trace the element of heredity in such conditions as color blindness, glaucoma, ordinary senile cataract, and progressive myopia. Extreme deformities in the shape of hyperopia and astigmatism appear in many instances to be congenital. There seems to be no question that a man or woman with such diseases as retinitis pigmentosa or congenital cataract should not marry, or at least not have children, because the probability of transmission is so strong and the disability is so great.

Fig. 2. These babies had sore eyes, but their sight was saved through prompt and vigorous treatment.

Then there are certain diseases which, through heredity, are very prone to involve and frequently ruin the eye, notably, syphilis. Indeed, before the day of complement fixation, the interstitial inflammation of the cornea was one of the triad of diagnostic symptoms of hereditary syphilis.

Many think the trained nurse is destined to take a far more prominent place in the obstetrics of the future—whether as the assistant or the competitor of the physician is in the lap of the gods. In any case, she must know about ophthalmia neonatorum. Credé showed that a drop of 2 percent nitrate of silver instilled into the eyes of the new-born baby would practically abolish ophthalmia neonatorum. It practically never occurs today in the large hospitals, and yet from the neglect of the family physician or the midwife a steady stream of blind children, in numbers practically undiminished, trickles into our institutions for the blind. Ten percent of the nation's blind might have been saved by this perfectly simple procedure. The midwife today superintends the birth of rather more than half the children born in our large cities, and we need not be surprised that under these conditions ophthalmia persists. But the reports of our hospitals and asylums have revealed the astonishing fact that at least half of the cases of ophthalmia result from the neglect of the family physician.

The reason for this neglect seems to me perfectly evident. Both the physician and the layman of today firmly believe ophthalmia neonatorum to be essentially a gonorrheal infection. All the text-books teach it. Every case of conjunctival discharge in the newly born is at once accepted by physician and mother and friends as proof of a previous infection of the mother by an unfaithful husband. All the popular pseudo-scientific teaching of the day lays special stress on this.

Now this is only half true. The gonococcus is only one of a number of germs which may cause ophthalmia. In America fully half the cases are caused by other germs. This venereal theory has been the great obstacle to universal prophylaxis. The physician, skeptic though he may be of a human virtue, cannot suspect every woman of harboring a latent gonorrhea, and taught as he has been,

there seems to him in many cases no logical need of prophylaxis.

Furthermore, physician and patient and friends often feel that prophylaxis against a venereal disease is not only unnecessary, but insulting. But if we convince both physician and mother that ophthalmia is not necessarily a disgrace, but in practically one-half the cases results from the common organisms found in vaginal secretions, the physician will at once see the advisability of prophylaxis in every case, while parents will no longer feel insulted at the suggestion of such a precaution, but will demand it. Furthermore, the community will cease to harbor the unworthy suspicions that now prevail in regard to almost all inflammations and scars in the eyes of children.

Fig. 3. Nurse treating baby's eyes with preventive drops.

The gonococcus theory also leads to serious errors in treatment of the disease. Physicians and nurses are afraid of it. It is denied admission to most hospitals, while the persistent idea that the disease is a desperate one calling for radical treatment so affects our ideas that I firmly believe almost as many eyes are lost or damaged by overtreatment as by neglect.

What we wish to accomplish is universal prophylaxis and, when cases do occur, immediate treatment and definite responsibility on the part of someone for the case. We do not all agree on the means.

Personally, I am very skeptical of our ability to accomplish much of real value by passing laws, but I believe that through the trained nurse and the various child welfare organizations we can make prophylaxis as much of a tradition as the babies' first bath. When that time comes we shall not have to worry about compulsory reporting or institutional treatment.

The trained nurse is destined to become more and more the guardian of childhood. In wealthy families the entire care of young children is often entrusted to her. In a more public capacity the school teacher is already dividing her responsibility with the school nurse, while the social service nurse is rapidly becoming the family adviser and familiar friend of whole neighborhoods.

We want to lay new responsibilities on the nurse. We want her to know the danger to the eyes of infections like trachoma, and how they are spread by unsanitary social appliances like the common towel. We want her to realize the tremendous handicap placed on a whole life by some of the supposedly trivial eye infections that so often follow the diseases of childhood and result in permanent scars and defects of sight. She must know how to distinguish the trivial from the serious, many of them she must treat day after day under the occasional supervision of the physician. We want the nurse to be aware of the fact, too little appreciated even by physicians, that the child who cannot see well or whose efforts to see result only in eye-strain and headache cannot be efficient either in school or in after life. She must learn to recognize these defects and use her influence to have them relieved.

There are several other phases on which I should like to touch if space permitted. Whether in the sick-room, as midwife, as teacher, as social worker, the trained nurse has a tremendous opportunity for social service, for popular education in all that makes for health and efficiency. We want her to help us create a demand for everything that makes for better care of the eyes, for higher standards of services, so that the optical fakir and the spectacle vender may go the way of the midwife. We want her assistance in creating a public opinion which shall so modify the training of physicians that an ophthalmologist may not be obliged to wade through all the other specialties before reaching his own, but be made a master of one specialty rather than a "Jack" of several; so that competent medical care of the eyes may not be practically restricted to the well-to-do and the interesting poor, but may be within the reach of all. We want her to help bring about such a modification of training school methods that there shall be less rolling of bandages and moulding of tampons and more practical training so that every nurse may have a knowledge among other things of the ordinary procedures in ophthalmic nursing. Public school nursing and social service nursing are becoming just as important as surgical nursing and in them a knowledge acquired in the dispensary is much more useful than the technic acquired in the ward or the operating room.

And finally, there are in every community a few blind children. Sometimes they are grossly neglected and sometimes treated like pet animals rather than human beings. Many of these children who are *born* blind have mental defects which have wrongfully been ascribed to their blindness. They must not be allowed to be a drag on the rest nor to make the condition of blindness seem more hopeless than it is. We want the nurse to know how much can be done for the normal blind children, how much better they do when trained with more fortunate children instead of being segregated. We want the nurse to realize and to make clear to her proteges that the blind child gets his greatest happiness and advancement not in having things done for him, but in doing for himself. Blessed was the inspiration that crystallized the treatment of blindness into one crisp phrase, "*Light Through Work.*"

A unit of the British Red Cross has been organized at Chicago, with Dr. John B. Murphy at its head. The unit consists of thirty-two doctors and seventy-five nurses and will be placed in charge of a hosiptal of 1,040 beds, probably in Belgium. Among the doctors are James Neff, Philip Chancellor, Earl Ball, George Davis, George P. Gill, R. L. Thompson, Clark S. Smith, Sidney Walker, Thomas H. Grosvenor, Edgar Lee, C. F. Fox and Scurry Terrill. The nurse membership of the corps includes Miss Isabel Patton and Miss Grace Baldwin, of Michael Reese Hospital; Mrs. Mildred van Aiken and Miss Irene Cains, of the Children's Memorial Hospital; Miss Nellie Brophy, of Mercy Hospital, all of Chicago, and Mrs. B. Barker, of the Lakeside Hospital, Milwaukee.

# SOCIAL HYGIENE
# VENEREAL DISEASES

Conducted by WILLIAM F. SNOW, M. D.,
*General Secretary, The American Social Hygiene Association,*
*105 West Fortieth Street, New York City.*

## Two Studies of Venereal Disease Clinics[1]

The important part that must be played in handling the venereal diseases as a public health problem by added facilities for diagnosis, advice, and treatment is now very generally recognized and is emphasized by the increasing number of agencies for these purposes and by the growing attention that their work is receiving. Questions of efficiency are being studied as a means for improving the quality of the work done and of enabling such agencies to reach larger groups of patients. The report of the testimony taken by the British Royal Commission on the venereal diseases points repeatedly to the increased need for clinical facilities for out-patients. In this country advisory agencies are springing up both under the direction of boards of health and as private enterprises.

The needs and possibilities of venereal disease clinics are well illustrated by recent studies of work done in Boston and New York City. Mr. Michael M. Davis, Jr., Director of the Boston Dispensary, urges the need of evening clinics to meet the necessities of working people who generally are employed during the hours when day clinics are open. Mr. Davis says in regard to the work of the evening clinics of the Boston Dispensary:

"The proposal to establish evening clinics has incurred some opposition from the profession, partly because of the feeling that undue competition with private practice would result, and partly because of the failure of those interested in the establishment of evening clinics to recognize the exact character of the problems which these clinics must face, and the proper organization to deal with them. So long as the out-patient clinics are established chiefly to care for the so-called "poor," meaning those who are at or below the line of self-support, or as centers of medical teaching, we have one condition of affairs. We have quite another condition when we propose to establish clinics as public health measures for the purpose of providing diagnosis and treatment for such dangerous contagious diseases as syphilis and gonorrhea, and with the aim that the clinics shall reach a large proportion of the population. It is clearly unfair to the medical profession to establish such clinics, unless the medical service is salaried. Furthermore, we must understand as exactly as possible the economic classes whom these clinics are to reach. If we are to regard the clinics as public health measures rather than as charities (they may of course be both), then we must give up the notion that the people entering them are "objects of charity." We must expect to receive persons who are self-supporting, but who are unable to meet the cost of the best treatment at the usual private fees. We must welcome the opportunity to establish clinics with such fees as these persons can afford to pay and we may properly endeavor to make such clinics entirely, or at least largely, self-supporting.

"The evening genito-urinary clinic for men was opened in the Boston Dispensary on March 23, 1914, and it has been maintained three evenings weekly, Monday, Wednesday, and Friday. The medical service has the same directing staff as the genito-urinary department of the regular morning clinics of the dispensary. The organization of this staff includes two chiefs, each on duty six months of the year, an assistant to each chief, and such additional assistants as the size of the clinic requires. The salaries have been $500 for the six months' evening service (three nights a week) for the chiefs. The first assistant receives a little more than half this amount. The fees charged patients are 50 cents a visit and the prices for medicines are somewhat above the cost of the drugs.

"During the first year of the clinic, closing March 22, 1915, 632 individual patients were received, paying 6,809 visits. This is an average of 10.77 visits per patient. The expense of the clinic, including all charges except rent and supervision by the general officers of the dispensary, was $4,622.89. The income from the clinic from the fees paid by the patients for admission and for medicines was $4,936.34. It should be added that patients unable to pay the 50 cents admission fee, or the fees for medicines, have not been refused.

"In the last week of July, 1914, an evening clinic for syphilis was opened. This has been maintained one night weekly, a salaried physician and a trained nurse being in attendance. For the first nine months of this service, 116 patients were treated, paying 449 visits. The fees charged are 50 cents a visit. Medicines are furnished at somewhat above the cost of the drug. Injections of neosalvarsan have been given for a fee of $3.50, but beginning in May, 1915, the increased market price made it necessary to raise the fee to $4.50. Wassermann tests are $1.00. The income from the evening syphilis clinic was $592.15, the expense $377.55, this including the receipts for neosalvarsan, but not the fees from Wassermann tests, both income and expense for this work being charged to the Boston Dispensary Laboratory."

Among the statistics obtained at the genito-urinary clinic are the following:

Of 369 patients who had not previously been treated at the Boston Dispensary, 326 (88½%) were single, and 43 (11½%) married. Of 197 patients, 89 (45%) came with their first gonorrheal infection, and 108 (55%) had had a previous infection. These proportions are reported to be substantially the same which obtained among the day clinic patients, but the evening patients are of a somewhat better economic condition. Confirmed alcoholics are few and casual workers are practically absent. These differences are what would be expected in view of the fifty-cent fee charged.

Of 200 cases reporting, 32 had received no previous medical treatment, and were mostly those who came to the clinic immediately after the onset of symptoms; 39 had been treated by private physicians; 24 by some other dispensary or hospital; 38 by quacks or "medical institutes"; and 67 had purchased medicine and treated themselves; that is, 105 of the 200 had received no reputable medical attention. A study of the prices paid by patients for previous treatment indicates that the cost to the patient at the clinic, counting everything, exceeds little, if at all, the prices paid for medicines alone when bought at commercial rates, either on a physician's prescription or at the patient's own initiative. In view of the brief period covered by these evening clinics' activities, Mr. Davis does not attempt a statistical estimate of the effectiveness of the treatment given, but cites, however, the figures of Henry D. Sanford, M. D., of the Lakeside Hospital, Cleveland, Ohio, in 1913, showing 12 percent of cures from 100 consecutive cases, and of the Boston Dispensary, 1911-12, showing 11.4 percent of cures in 499 cases.

"With the present fees, methods, and groups of patients reached, there is an enormous field for such clinics, i. e., practically all venereal patients from the whole vast group of self-supporting wage-earners. To reach such patients among clerks, students, and professional and business men of small means, would probably require more indi-

[1]Social Hygiene, June, 1915. Evening Clinics for Venereal Disease. Michael M. Davis, Jr., Ph. D., director of the Boston Dispensary, and A Survey of Venereal Clinics in New York City, and A Statistical Efficiency Test, B. S. Barringer, M. D., and Philip S. Platt, M. A.

vidual privacy than has thus far been found necessary, although the existing routine of the clinics already provides for more individualization than is often found. . . .

"On the other hand, are we not leaving out the lowest paid workers, who cannot, or should not, afford even a 50-cent fee? Is there not need for evening clinics, free, or at the nominal prices usually charged at morning or afternoon clinics? Undoubtedly there is such a need. . . .

"If out-patient clinics are indicated as an important means of enlarging treatment facilities, we must establish clinics at such hours and under such financial conditions as will render them most capable of doing the work that needs to be done. We must regard them as public health measures. It is a prime duty of the leaders in this campaign to see that the leaders of the medical profession, and the interested general public, are informed as to the facts and kept abreast of developments by a persistent process of education. . . ."

In New York City a survey of the 27 clinics in which syphilis is treated and the 26 venereal disease clinics was recently made under the direction of the Society of Sanitary and Moral Prophylaxis and the Association for Improving the Condition of the Poor. The report prepared by B. S. Barringer, M. D., and Mr. Philip S. Platt approves seven of the syphilis and four of the venereal disease clinics, and disapproves 20 and 22, respectively, basing its findings upon the requirements of the Associated Out-clinics of New York City. These requirements are as follows:

I. SYPHILIS

1. The treatment of syphilis, whatever its manifestations, should be conducted in one department, which shall be either a special department of syphilis or the dermatological department.

2. Whenever the nature of the lesion, such as eye, throat, viscera, etc., has directed the patient to a department other than that for syphilitics, the treatment should be conducted jointly by the two departments, but the antisyphilitic treatment be administered in the department of syphilis or the dermatological department.

3. Every department for the treatment of syphilis should be provided with a dark-field microscope.

4. Facilities for making the Wassermann reaction test should be provided, if possible, in every institution where syphilis is treated.

5. Wherever laboratory facilities for making the Wassermann reaction test are not available at the clinic, provision should be made for the prompt conveyance of the specimens to the Department of Health or other places at which the examinations are made.

6. The principle of limitation of the number of patients in each clinic should be adopted, such limitation to be based upon the estimated facilities in men and equipment of each clinic.

7. Intravenous medication may be administered to suitable ambulatory cases of syphilis.

8. In view of the fact that an obligation to render a patient with an infectious disease innocuous at the earliest possible moment rests on the institution to which the patient has applied for treatment, it is the duty of such an institution to provide suitable medication free to those who are unable to pay for it.

9. The Association recommends that a suitable uniform circular of instructions be given tc every syphilitic patient at the dispensary.

10. The Association recommends that uniform forms of records be employed in all the clinics treating syphilis.

II. GONORRHEA AND CHANCROID

1. Every department for the treatment of gonorrhea and chancroid should be provided with a microscope.

2. Every department for the treatment of gonorrhea and chancroid should be provided with proper facilities for sterilization.

3. Facilities for endoscopic and cystoscopic work should be provided.

4. Wherever laboratory facilities for making the complement deviation test for gonorrhea are not available at the clinic, provision should be made for the prompt conveyance of the specimens to the Department of Health or other place at which the examinations are made.

5. The principle of limitation of the number of patients in each clinic should be adopted, such limitation to be based upon the estimated facilities in men and equipment of each clinic.

6. In view of the fact that an obligation to render a patient with an infectious disease innocuous at the earliest possible moment rests on the institution to which the patient has applied for treatment, it is the duty of such an institution to provide suitable medication free to those who are unable to pay for it.

7. The Association recommends that a suitable uniform circular of instructions be given at the dispensary, to every patient suffering from gonorrhea.

8. The Association recommends that uniform forms of record be employed in all the clinics treating gonorrhea.

The Association has recently adopted the additional requirement that genito-urinary, skin and syphilis clinics be open at least three days in the week. It has under consideration for action at its next meeting that a uniform method of discharging gonorrheics be adopted, and that this include a complement fixation test.

The conditions found, however, are not as discouraging as would appear from the figures given, inasmuch as many of the disapproved clinics could "with slight effort and with a few changes" become approved.

In spite of the insistence of the Associated Genito-Urinary Clinics, separate departments for syphilis and venereal diseases are maintained in only five clinics. The lack of adequate facilities and adequate instruments is a frequent fault and one for which the clinic authorities, rather than the chiefs of clinics, are responsible. "Many of the rooms in which the clinics are held are decidedly filthy. This, by the way, applies not alone to genito-urinary and syphilis clinics. The effect upon a patient of advice given by the clinic physicians as to personal cleanliness, for example, is considerably negated if given in a room that is dirty. This is again a matter for the clinic authorities and not for the chief of clinics." A further criticism is based upon the fact that some clinics are open but two days a week.

"Supplementary to the above survey of the genito-urinary clinics, and in connection with a study of the treatment of Association for Improving the Condition of the Poor, patients having venereal disease, the Bureau of Public Health and Hygiene of that organization planned to observe and compare the results obtained in several clinics, selected as representative of the best and of the worst types of day and night clinics. Instead of finding the information readily available, it was either found to be unobtainable, or obtainable only upon many days' research. The number of patients, the number of visits per patient, and the results of treatment in the four clinics studied were obtainable to the following extent: in one clinic it was absolutely impossible to determine such facts, as no record was kept beyond the name, address, and diagnosis at first visit; in another an analysis of about 99,000 cards, representing all patients coming to the entire dispensary during a period of three years, offered the only means of determining the facts; in the other two an analysis was necessary of only a year's clinic records, though these records, in one case, were the private possession of the physician in charge. The desirability of information regarding the operation of a clinic should be as manifest as the necessity for bank accounting.

"Detailed analysis of a year's records was possible in only two of the clinics. It was necessary of course to go back about six months from the time of the study so that new patients coming in the last month of the year and continuing treatment into the following year could be taken into consideration. Patients were divided into three main classes—gonorrheal, syphilitic, and others. Gonorrheal patients, acute and chronic, diagnosed by the presence of gonococci, were then classified according to whether they had been 'dismissed as cured,' 'ceased treatment, improved,' or 'ceased treatment, unimproved.' The standards used in these classifications, while not identical, are fairly comparable. In both clinics a patient was declared 'dismissed as cured' only when his record so stated. In clinic 'A' this was done when there was complete absence of discharge after the beer test, the urine was repeatedly clear, and no gonococci could be found. Complement fixation was not a regular procedure. In clinic 'B' no case was discharged as cured until, in addition to the other tests, the blood was found negative. The class 'ceased treatment, improved' consisted in both clinics of those in whom discharge was absent (whether only temporarily or permanently was not known), the urine was only slightly, if at all, cloudy, and gonococci were not found. There are undoubtedly a number in this group who would, in the course of another week or two, be pronounced cured, just as there are doubtless those in whom the disease, being only dormant, would flare up following any indiscretion. The third group is composed of those in whom the symptoms were active. Following are the number and percentages in each group:

GONORRHEA

| | Clinic A | | Clinic B | |
|---|---|---|---|---|
| | Number | Percent | Number | Percent |
| Dismissed as cured | 25 | 9.7 | 38 | 9.4 |
| Ceased treatment, improved | 50 | 19.3 | 57 | 14.2 |
| Ceased treatment, unimproved | 184 | 71.0 | 308 | 76.4 |
| | 259 | 100.0 | 403 | 100.0 |

"Less than 10 percent were dismissed as cured. That the situation is not peculiar to these best two clinics may be seen by reference to the tests conducted by Michael M. Davis in 1912 and Dr. Henry L. Sanford in 1913, already cited. Dr. Sanford says, 'Whether twelve cures out of a hundred are a creditable number or not, with the drawbacks of this class of patients, and the fact that students in training assist in the clinic, I will leave to the judgment of others who have worked under these conditions. But creditable under the circumstances or not, it is useless to pretend that such results are satisfactory.'

"Nor is the situation improved when viewed by the number of visits made per patient. Opinions vary as to the number of treatments necessary to effect cure, but it will probably be admitted that small results can be obtained from only one or two visits, and that the majority of cures necessitate well over five visits.

"The percentage of patients making one visit only was 28.9 at Clinic A and 30.3 at Clinic B, while Davis found it to be 47.8. The percentage of patients making 5 visits or less is 52.8 at Clinic A and 61.8 at Clinic B, while Davis found 81.2 and Sanford 56. Certainly no one will deny that if 30 to 50 percent of the patients come only once, there must be a serious waste of the physicians' time and the clinics' money. Of 386 patients making five visits or less in the two clinics, only 1.8 percent were dismissed as cured."

The following statistical data in regard to gonorrhea patients are of interest:

Source of infection, Clinic A: street prostitutes, 36.6 percent; house prostitutes, 18.9 percent; domestics, friends and working women, 27.7 percent; wives, 1.5 percent; unknown, 14.7 percent. Of 662 patients in the two clinics, 305 (46 percent) admitted a previous gonorrheal infection; 361 (54 percent) were native-born; 544 (82 percent) were single; 141 (21 percent) were under 21 years of age; 408 (62 percent) were from 21 to 30 years of age; a total of 549 (83) percent under 30 years of age.

## INSTITUTION LIBRARIES TO FORM LEAGUE

### American Library Association Initiates Move to Stimulate Growth of Libraries—First Notice Sent Out

From the office of Miss E. Kathleen Jones, librarian at McLean Hospital, Waverley, Mass., the following notice comes for publication to the authorities in hospitals and similar institutions, which tells its own story:

INSTITUTION LIBRARIES LEAGUE

Upon the application of certain librarians interested especially in work in institutions, the American Library Association, at a recent meeting, voted to appoint an executive committee to further the formation and growth of libraries in hospitals (state, general and special), schools for the feeble-minded, prisons and reform schools. This committee, as organized, bears the name of The Committee on Library Work in Hospitals and Charitable and Correctional Institutions, and is composed of seven members: Miriam E. Carey, *Chairman, Supervisor of Institution Libraries, Minnesota State Board of Control;* Julia A. Robinson, *Secretary of the Iowa Library Commission;* E. Kathleen Jones, *Librarian at McLean Hospital, Waverley, Mass.;* Florence R. Curtis, *University of Illinois Library School;* Florence Waugh, *Supervisor of Institution Libraries, Nebraska State Library Commission;* Mary E. Eastwood, *New York State Library;* Carrie E. Scott, *Indiana Public Library Commission.*

The plan of the committee is to organize the various hospitals and other institutions in the United States and Canada into an INSTITUTION LIBRARIES LEAGUE, for the purpose of mutual help and exchange of ideas. The committee hopes that every hospital, general or special, which has a library or wishes to have one, will join this League. Communications in regard to it should be addressed to Miss Miriam E. Carey, State Board of Control, St. Paul, Minn. To be a member it is not necessary to be a trained librarian; in fact, it is to help the *un*trained librarian that the League is formed—that through it the services of those who have had experience in the work may be at the disposal of the others. Anyone, physician, stenographer, nurse, patient—whoever has charge of the library—is eligible to represent the hospital.

In addition to the formation of the League, the committee plans to publish, as soon as possible, the following monographs:

Survey of Institution Libraries.

Manual on Arrangement and Care of Books in Institution Libraries.

Syllabus of a Course of Lectures on Books and Reading, Suitable for a Training School for Nurses.

Bibliography of Occupational Work and Handicrafts in Hospitals.

"Campaign Material"—Statement of Reasons for Developing and Maintaining Institution Libraries.

That the bibliography of handicrafts may be as complete as possible, every hospital making a feature of this work, or specializing in any branch of it—embroidery, lacemaking, weaving, basketry, pottery, woodwork, etc.—is urged to send to Miss Jones, McLean Hospital Library, Waverley, Mass., a list of books, pamphlets and articles in periodicals which have been found valuable in this department.

The committee would also call the attention of the hospitals to the fact that there still remain a few copies of "A Thousand Books for the Hospital Library," which may be had for twenty-five cents each upon application to the A. L. A. Publishing Board, 78 E. Washington Street, Chicago.

Through the courtesy of the editors of THE MODERN HOSPITAL notices of the League and the work of the committee will be published from time to time in this periodical.

THE COMMITTEE ON LIBRARY WORK IN HOSPITALS AND CHARITABLE AND CORRECTIONAL INSTITUTIONS.

MIRIAM E. CAREY, Chairman,

E. KATHLEEN JONES,

Sub-Com. on Hospitals.

# LETTERS FROM OUR FIELD EDITORS

## TRANSFORMATION OF TRAINING SCHOOL

### St. Louis City Hospital Acquires Control of School Heretofore Conducted Independently

Effective July 3, the City of St. Louis has assumed the responsibility of conducting a training school for nurses at the City Hospital. This is a move that has been desired for several years, but was not possible until the new city charter went into effect, permitting the conducting of a school. This work was formerly carried on by the St. Louis Training School for Nurses, a training school that has been in operation since 1883. This training school has always been operated in connection with the St. Louis City Hospital. This proposed change not only contemplates the conducting of a training school for nurses at the City Hospital, but also the establishment of a school for attendants and a training school for nurses at the Infectious Hospital and Tuberculosis Hospital of St. Louis, and for the organization and operation of a corps of visiting and district nurses. The control of the entire nursing situation will be vested in a nurses' board, operating in conjunction with the superintendent of the various institutions and with the hospital commissioner. Plans are also under way to establish a training school for attendants at the City Sanitarium.

F. E. CHAPMAN.

### News From the Pennsylvania Field

#### CHARTER FOR NEW HOSPITAL

Philadelphia's newest hospital, to be erected at 54th and Cedar avenue for the Sisters of Mercy, will be known as the Misericordia Hospital. The name was in the application for the charter filed by the Master, Francis L. Maguire, in the Common Pleas Court.

A fund of more than $200,000 was raised in the city and surrounding counties for the structure and within a short time the actual work of construction will be under way. It was originally proposed to call the institution the Mercy Hospital, but the Latin name was reported by the Master to be the one most likely to prevent its getting confused with other hospitals.

#### BEQUEST TO PRESBYTERIAN HOSPITAL

In the provisions of the testament of Phoebe A. Brown, who died recently at Prospect avenue, Chestnut Hill, $5,000 is bequeathed to the Presbyterian Hospital to endow a free bed in memory of a brother.

#### ASSISTANT DIRECTOR WILSON RESIGNS

Mr. Alexander Wilson, the fearless Assistant Director of Public Health and Charities, who has done so much good work for the city hospitals, has resigned his position in Philadelphia to become Director of Investigations in the Department of Charities, New York City. While a certain political element in Philadelphia will be highly pleased at the resignation of Mr. Wilson, those interested in the social welfare and efficiency of the city hospitals will regret his departure and can only hope that the good work started by Mr. Wilson will be continued. Mr. Wilson's successor is Edward A. Lees.

#### PRIZE AWARDED HEALTH DEPARTMENT

The International Jury of Awards at the Panama-Pacific Exposition has awarded a grand prize to the State Department of Health of Pennsylvania, and Dr. Samuel G. Dixon, Commissioner of Health, who planned the exhibit has been given honorable mention.

#### POST-GRADUATE TEACHING ASSOCIATION

An association has been recently formed in Philadelphia for the object of investigating the resources for post-graduate teaching existing in the city and arranging the courses offered by each hospital and college so as to obtain all the information in such form as to be readily accessible to those desiring to pursue post-graduate studies.

#### CHILDREN'S HOSPITAL COUNTRY BRANCH OPENED

On June 15, the Babies' Branch of the Children's Hospital of Philadelphia at Wynnefield was formally opened for the reception of infants and such other cases as the hospital considered suitable. It is proposed to continue the branch service throughout the year hereafter.

#### NURSES' HOME OPENED

The new Home for Nurses of the Germantown Hospital was formally opened on June 29 for occupancy. The building and equipment was the gift of Mrs. William G. Wardin as a memorial to her husband. The new building contains about 60 single bed rooms for nurses and is in close proximity to the main hospital building, and is constructed of red brick with terra-cotta trimmings.

#### SITE FOR MITCHELL MEMORIAL PURCHASED

The Board of Managers of the Orthopedic Hospital of Philadelphia have purchased the parish house of the Epiphany Chapel, 17th and Summer streets, as a site for a memorial building to the late Dr. S. Weir Mitchell. It is understood that the hospital paid $40,000 for the house and that it will be remodeled into a dispensary building in the near future.

WILLIAM H. WALSH.

# LETTERS TO THE EDITOR

### Fire Sprinklers in Hospitals

To the Editor of THE MODERN HOSPITAL:

In the article, "Safety from Fire to the Helpless in Hospitals," by H. F. J. Porter in a recent issue of your valuable publication, the author makes the following comment on automatic sprinklers:

"Sprinklers do not operate until a fire occurs and has reached a magnitude sufficient to develop a temperature in which human beings cannot long exist, and, as gases and smoke accompany this temperature, the physical and mental agony of the patients would have a very injurious effect on them, and probably many of them would be suffocated before they could be rescued from such an environment."

It is clearly obvious from this statement that the author is quite unfamiliar with the operation of automatic sprinklers and their record in controlling fires, which covers a period of many years. That "sprinklers do not operate until a fire occurs" is quite correct, but his reference to the magnitude of a fire necessary to operate sprinklers is not. According to the 18-year record of the National

Fire Protection Association, of 16,193 fires in sprinklered properties, each one of 4,864 fires was controlled by one sprinkler, and in 10,981 fires 69.4 percent of the total, not over 5 sprinklers operated in successful control.

Fires promptly checked in incipiency by automatic sprinklers cannot "develop a temperature in which human beings cannot long exist." The author accentuates this observation thus: "As gases and smoke accompany this temperature, the physical and mental agony of the patients would have a very injurious effect on them, and probably many of them would be suffocated before they could be rescued from such an environment." Verily, the author has a vivid imagination.

In respect to this, to say the least, erroneous opinion, it is sufficient to call attention to the tests made under the direction of Chief Kenlon, of the New York Fire Department, to demonstrate that automatic sprinklers will operate before the heat of a fire becomes unbearable. The test was made in a small house in the drill yard at fire headquarters. Firemen remained in the house until the fire kindled on the floor had been entirely extinguished by automatic sprinklers.

As a matter of fact, the average period of time from the beginning to the finish of a fire under automatic sprinklers is 2½ minutes. Sprinklers open normally between 30 and 60 seconds after fires begin, and extinguish the flames within 60 and 90 seconds.

And if the sprinkler does not put out the fire till it has attained the headway remarked, how is it that in thousands upon thousands of fires in properties equipped with automatic sprinklers not a life has been lost? At the 18th annual meeting of the National Fire Protection Association in 1914, the committee on safety to life reported that it had been unable to learn of a panic ever having taken place in a building equipped with a properly maintained system of automatic sprinklers, and expressed this opinion:

"In view of the fact that there are innumerable instances of lives being lost in similar properties without sprinkler protection, there is only one conclusion to be drawn from a study of these replies, namely, that the sprinklers have prevented the fires from making sufficient headway to even become a menace to the lives of those people in the building, and thus, by their action, may be said to have saved a tremendous number of lives."

In rendering its report at the 19th annual meeting of the National Fire Protection Association this year, the committee, in commenting on the slight recognition of automatic sprinklers in certain state laws, declared that the feeling of those who know sprinkler efficiency and the remarkable freedom from loss of life in sprinklered buildings is that allowances for increased numbers of occupants in buildings equipped with automatic sprinklers might be doubled with safety.

Automatic sprinklers began to be installed in 1875. Today more than 35,000,000 automatic sprinklers are in service. The economic effect of these devices since 1875 in terms of money is conservatively estimated to be more than $2,500,000,000 saved in reduced insurance premiums, losses of property and profits averted and conflagrations prevented.

For 18 years the National Fire Protection Association has compiled statistics of fires in properties in which automatic sprinklers are installed. Summaries of the statistics are published annually in the Association's "Quarterly." Recently the summary for 1914 was published.

The tabulations of the statistics for 1914 of fires in properties equipped with automatic sprinklers show that 1,479 fires were reported for the year and the total for 18 years is 16,193. Of the fires in 1914, 96.28 percent were successfully controlled by sprinklers; and in the 18-year period 95.28 percent were thus controlled.

A study of the tabulations of the 18-year period reveals that in the classes of occupancies given there are 39 classes, in which factory workers, particularly women, are in greatest numbers.

The 39 classes are only 28 percent of the total number of classes listed; in them occurred 48.3 percent of the 16,193 fires. But the proportion of the fires in these classes controlled successfully by automatic sprinklers is not 95.28 percent, but 98.2 percent!

In other words, in the classes of properties where the hazard of life from fire is most considerable, classes which number but 28 percent of the total and have nearly half of all the fires, the successful control of fires by sprinklers is 98.2 percent, nearly 3 percent above the general average!

And the 1.8 percent of the fires that were not controlled in these classes were not principally because water was shut off from the sprinkler system. But this percentage of imperfection is not that of automatic sprinklers, but of human error, and of that is low, far lower than it would be in the use of the bisecting fire wall, the worth of which as an assurance of safety to life is more imaginary than real.

The safety-to-life committee previously referred to is of the opinion that unwarranted credit is being given to horizontal exits in division walls; that is, bisecting fire walls, and that simply passing through such a wall in the same building does not guarantee safety to those who have escaped in this way. Several conditions of peril which are possible with the bisecting fire wall method of escape were explained by the committee.

Mr. Porter would render old and combustible hospitals safe with bisecting fire walls. His reasoning is that the safe thing to do is to get away from a fire instead of "getting" the fire before *it* gets away.

To "get" the fire, not to get away from it, should be the first law of safety!

National Automatic Sprinkler Association.
I. C. Hoagland, Secretary.

### Color Scheme of Operating Rooms

To the Editor of The Modern Hospital:

I note in the recent edition of The Modern Hospital an inquiry and also discussion regarding color in operating rooms. As ours is a new hospital and strictly modern in every particular, and we have departed from the old idea of an all-white operating room, our experience may be of interest to some reader.

Our operating suite consists of a sterilizing room, operating room, anesthetic room, and surgeons' scrub room. Woodwork, walls and ceilings are all enameled in the same tone, which is dark cream.

The operating room is a large room in the northwest corner of the building, with three windows and a skylight, affording an abundance of natural light; but with this shade of color all glare is removed, making the light effect much more pleasing than the former all-white.

As we have never used anything but white clothing in our operating rooms, I would very much appreciate being told the advantages of black clothes.

Lena C. Sheimers, R. N.,
Superintendent Kleberg County Hospital, Kingsville, Tex.

Bonds have been voted for a county hospital at Susanville, Cal.

# QUERIES AND ANSWERS

### Sterilizer Top Control

To the Editor of THE MODERN HOSPITAL:

Which is better, oil pump or hydraulic movement for utensil and instrument sterilizer lids? We have had the oil pump and it has not always been satisfactory and is frequently out of order. We are now buying some new utensil sterilizers and wish to know if we can count on the hydraulic as being more reliable. A SUPERINTENDENT.

The hydraulic lift is more reliable and in every way better than the oil pump. It costs a little more, but is worth it.

### Cotton or Wool for Blankets

To the Editor of THE MODERN HOSPITAL:

This hospital has always used all-wool double blankets that cost about $5.00 per pair; we must lay in a large new stock and are thinking about part cotton and part wool at about $3.00 per pair. What does THE MODERN HOSPITAL think about it? A PURCHASING HOUSEKEEPER.

All-wool blankets are nicer and softer; your private room patients are accustomed to that kind at home and will appreciate them in the hospital; ward patients, as a rule, are not accustomed to them, and will not notice their absence. You had better continue the all-wool for private room service; but a blanket 40 percent wool and 60 percent cotton will answer well for the wards, especially if it is well laundered when necessary. Blankets should be very carefully laundered, and they will serve twice as long and look far better if you can put them through the dry tumbler instead of "just shaking them out," as is often done. The dry tumbler fluffs the nap out beautifully and makes them soft and downy.

### Cost of Laundry Work

To the Editor of THE MODERN HOSPITAL:

We have an average of 120 patients, and an average of 2,500 pieces of laundry per day; our laundry work costs us about $1.00 per hundred pieces, taking everything, large and small, flat and hand pieces. It is suggested that our work is costing us too much. What does laundry work cost others? A HOUSEKEEPER.

Conditions differ in hospitals, but taking the average, your laundry is not costing very greatly in excess of the average hospital laundry of that size, especially if you are doing careful work and getting your clothes clean, without tearing or unnecessarily wearing them out. Some large hospitals do their work for approximately 50 cents per hundred, but the cost goes up in proportion as the size of the laundry goes down. You are probably paying a good salary to your head laundryman, but if he is a good, careful, sober and saving man, you had better keep him. Perhaps you are doing too much handwork; one body ironer that costs about $175.00 will do much of the work that some hospitals are doing by hand; and a body ironer with one operator will do the work of four hand irons. It will do the collars, interns' suits, nurses' skirts and dresses, aprons, underwear; in fact, everything excepting the nurses' fancy waists. You might save something by looking into this feature of the work. If you can cut out two or three girls you will save that much.

If your laundry is saving your linens, you must credit that saving to its account. You cannot get your work done in a commercial laundry for less money than you are now spending, and your own laundry will give you far more satisfactory service. Your troubles will begin when you send your clothes out.

### Disinfectants for Hospitals

To the Editor of THE MODERN HOSPITAL:

We have been using chloride of lime as a disinfectant in our hospital and find that it is destroying our plumbing. Can you kindly recommend a substitute?

INDEPENDENCE SANITARIUM,
Independence, Mo.
W. H. Callin.

Chloride of lime, in the way that you have been using it, has practically no antiseptic value. It is more of a deodorant. The only effective disinfectants for sinks and lavatories are hot water, steam, and some form of carbolic acid. Obviously, you cannot use live steam, but you may keep your waste pipes and trap valves clean by running hot water through them from your hot water faucet. It should be run for considerable periods of time, both for its flushing effect and the heat effect. Three or five per cent carbolic acid in rather large quantities will have an actual antiseptic effect in your waste pipes and sewer traps. It will be better to use the hot water. Carbolic acid, on account of the odor, takes us back to the old antiseptic period, which is a confession we should not make.

### Fresh Eggs

To the Editor of THE MODERN HOSPITAL:

How are we to tell when an egg is "strictly fresh?" Ours is a state hospital and our eggs, as well as many other commodities, are contracted for; the contract for eggs calls for a "strictly fresh" egg. As a matter of fact our eggs are not bad, but they taste stale and many patients dislike them; the nurses and administrative officers will not eat them at all; yet the contractor insists he is living strictly up to his contract. A STEWARD.

A strictly fresh egg can be easily told by candling. It must be not only "clear" and the yolk firmly separated from the white; but the shell must show no air space—in other words, the shell must be full of meat.

In the spring of the year hundreds of thousands of eggs are put in incubators to hatch; a certain portion are not fertile, and the proportion of unfertile eggs is very large in the late winter and early spring laying. After four or five days of incubation the eggs are candled, when the embryo chick can be plainly seen. The eggs in which there is no developing chick are removed and these are sold at a low price. That four or five days of incubation at 103 degrees F. does as much harm to the eggs as that many months of cold storage, and incubator eggs are always stale and musty to the taste. Egg jockeys can do a good many things with eggs, especially in the arrangement of the classification, but they cannot fill the shell again after the water has been evaporated out in the incubator. You have probably been getting incubator eggs.

Take a wooden starch box, or a pasteboard box, large enough to set a candle upright in; cut a hole in one side, about the height of the flame, and about the shape of an egg, only a little smaller. Now set your candle upright on a table and set the box over it, after having removed the bottom end of the box. Now darken the room and hold your egg against the small hole so that you will have

to look through the egg at the candle. If there is an air space the egg is not "strictly fresh."

### Where to Keep the Record

To the Editor of THE MODERN HOSPITAL:

Will you please advise us of the best place to keep patients' records while the patients are still in the house? Some of our doctors find fault when we hang the record on the foot of the bed, and others find fault if we do not keep it with the patient. W. T. B., Wisconsin.

The objection to hanging the record on the patient's bed is that the patient and visitors will look it over and are sure to find something that either they or the patient would better not know. The objection to keeping the record in the head nurse's office or at some other remote point is that the doctor wants it handy when he makes his rounds. So you have the two horns of the dilemma, and no matter which you choose you will wish you had taken the other.

On the whole, the policy must be dictated by conditions. If you have interns, so that every visiting doctor can have one to accompany him—and every doctor should have an intern—you can keep the records at some central point, and the intern can carry all the records of the cases of that particular doctor on the rounds, and refer to each in turn. If only a nurse, or the head nurse, makes rounds with the doctor, this plan is more difficult because there will often be a good many of them, and they are heavy. In any event the record should be there when the doctor sees his case, so that orders can be put down at once, before they are forgotten, and so that the doctor can size up the situation intelligently.

Perhaps the best way is to keep ward records in the rack of the head nurse's desk in the ward, and let the nurse get each one as the case is visited. For the private rooms, a drawer in the dresser is a good place to keep the record.

It will certainly add much to the efficiency of the service if the record can be near the patient, so that nurse and intern can make their notations without having to go long distances, and so it can be referred to handily; and it will cost many extra steps and a great waste of time if the record is not kept near by—and then again many an order has been put down wrong or not at all because the nurse or intern forgot the details in the lapse of time and because of many other orders. The carrying out of orders, too, has often been neglected in the temporary absence of the record.

### Part-time Nursing

To the Editor of THE MODERN HOSPITAL:

We are asking information regarding the financial aspect of special nursing and think you can give us some suggestion as to how to meet the difficulties that are presenting themselves in that line.

To explain more fully I might cite the case of a patient who was here recently, and whose expenses were: room, fifteen dollars; special nurse, twenty-five dollars; board of nurse, five dollars, and physician's fee, probably about ten dollars per week; a total of fifty-five dollars. This same patient would probably have been cared for and have made the same recovery in a private hospital or sanitarium at twenty-five to thirty dollars per week, without a special nurse. When these facts are discussed by patients of both kinds of hospital the result is not in favor of the general hospital. Has part-time special nursing and the grouping of patients to arrange for this been a success?

Thanking you in advance for your kind helpfulness.

IDA B. VENNER, R. N.,
Superintendent Passavant Memorial Hospital, Jacksonville, Ill.

The best general hospital is that in which the largest number of diseases can be taken care of, and the greatest variety of social and financial problems met; in other words, the hospital ought to be able to take care of any disease from which a patient suffers, and it ought to be able to take care of any financial problem, the poor patient who cannot afford to pay anything, and the rich man who can afford all the luxuries. The hospital that fails in satisfying these two problems fails in a large part of its obligation to the public.

You will have patients who will want the highest class of rooms and who will want all sorts of luxuries, including a day nurse and a night nurse; and then you will have patients whose finances will just permit them to be in a private room, but who cannot afford special nursing. You ought to be in position to take care of these patients with your house nursing, without any expense to them. Your head nurses would direct their care and your pupil nurses would do the work.

We do not know of any hospital that does what you express in the term "part-time nursing." Either the patient has a "special" or he is being taken care of by the house nurses. He would pay a regular fee of $25.00 a week for a graduate special, with $5.00 or $7.00 a week to the hospital for the nurse's board; or he would have a so-called undergraduate special, preferably a senior pupil nurse in your hospital, for which some hospitals charge $10.00 or $12.00, and others charge $15.00 or $20.00. It seems you ought to be able to accommodate your patient and meet his financial ability.

You will agree with us that it is ridiculous that a patient in a $15.00 room should have $40.00 more piled on top of that amount—all "extras." We think you ought to have enough pupil nurses to let some of them do special duty, and see no reason why there should not be house specials, or undergraduate nurses, to the number of say one-half of your senior class. A hospital ought not to charge for the service of a probationer, a junior, or an intermediate; that nursing ought to be given as a part of the hospital service, but senior pupils ought to have a good deal of experience in private nursing, and placing say half of the class on special in the hospital should not be an excessive number.

Of course, we all admit that the hospital is obliged to nurse its patients properly, and the time will come, one of these days, when a patient will not have to have a "special" under any circumstances.

### Interns for Small Hospitals

To the Editor of THE MODERN HOSPITAL:

It seems the large hospitals have no trouble getting interns, while it is almost if not quite impossible for the small hospital to find young medical graduates to serve as interns. We hear now that there is a movement on foot in the medical profession to make it still harder for small hospitals to get interns, by the appointment of committees in various states to work in connection with the medical schools and to select the hospitals in which interns may serve. Can you tell us anything about this new movement, and also any way by which small hospitals may secure interns? We have asked many superintendents about this, and the situation seems to be as hazy in their minds as it is in ours. A SUPERINTENDENT.

Nearly two years ago the Council on Medical Education of the American Medical Association appointed a committee for each state in the union, whose duty it was to investigate the hospitals, and to classify them according to their fitness to provide adequate practical training for young physicians before going into medical practice on their own account.

Several years ago this same council was largely responsible for the classification of medical schools according to their fitness for educating young men and women in the profession of medicine. Nearly one-half of the medical schools that were in existence when this work of classification began have been driven out of business, and many others are on the ragged edge. The result has been a vast improvement in the medical schools.

After three or four years of study of the field, the council came to the conclusion that the very best part of the medical training of young physicians was to be had in good hospitals; then came the question of which are the good hospitals? And what is a good hospital? These state committees were appointed to find out the answers to these two questions and to tack the answers to the hospitals in the several states.

In brief, these committees have set some standards; an acceptable hospital must have ideals; it must have good physical equipment in consonance with modern medical demands; it must have good medical men on its staff, capable of giving a good training to young doctors; but above all else it must have a teaching atmosphere, an atmosphere in which the patient is able to get the best in the way of diagnosis and treatment that modern medical science affords; an atmosphere in which every patient is a lesson to staff, to intern, to nurse and to the administration.

The hospital in which these things are to be found need not fear, but should rather welcome, the activities of the state committees of the Council on Medical Education of the American Medical Association.

As for a way to attract interns: these young men and women are eager to get a hospital, after their graduation, that will afford them the broadest and most convincing experience for their use in private practice when they are thrown on their own resources. Personally, I am of the opinion that what the small hospital may lack in the way of quantity and variety of clinical material, may be made up in the possible individualism of the training, which means the character of the men on the staff and their attitude toward the younger men working under their guidance.

All this means that if you want interns, you must prepare your hospital to give them a better training than they can get elsewhere, and then bring this fact to their knowledge as they leave their schools and are looking for intern service.

JOHN A. HORNSBY.

### The Inventory System in Hospitals

To the Editor of THE MODERN HOSPITAL:

Can you tell us whether it is practicable to keep an inventory of commodities used in hospitals? We have tried it with some of our supplies, but it has been so cumbersome that we have come to feel that the cost of keeping the inventory is greater than the loss in not having it, and we finally decided to submit the question to THE MODERN HOSPITAL.

A PITTSBURGH HOSPITAL.

If the superintendent of the hospital insists on knowing what he is doing all the time, and checking up on all the institution's activities, he will want to know how his various stocks are being used and in what state they are. An inventory system of keeping account of furniture, linens, blankets, silverware and the things that are used until they are worn out, is not difficult, nor does it take much time in the keeping; it only requires discipline and order in the management that will report and record any worn-out pieces so that they can be subtracted from the stock lists and replaced if desirable.

But the keeping of an inventory of consumable things is a vastly different matter, and contemplates very rigid accounts of purchases and distributions. In order to keep such an inventory you must begin with the requisition of supplies by printed forms, serially numbered, and issued in duplicate, one copy to go to the seller and one to be retained for comparison; the storekeeper must keep his receipts and distributions in proper form, and I have sometimes thought the only proper place to keep the inventory is in the store room; the trouble about this is that it is difficult to get a storekeeper competent to keep up such a system.

GLOVES, RUBBER; SIZE —; ROUGH

| *Purchases* | | | | *Distribution* | | | | On Hand | |
|---|---|---|---|---|---|---|---|---|---|
| Date | Quantity | Price | Amount | Date | Quantity | Price | Amount | Date | Quant. |
| | | | | | | | | | |

If the system is kept by the storekeeper, a transcript should be taken off daily by the superintendent's secretary, on a card index form such as accompanies this answer; that will serve two purposes, namely, to keep a constant check on the work of the storekeeper and also keep a list of the "things wanted" in the superintendent's office.

It is utterly useless to attempt a running inventory of perishable food supplies; the value of such information would not pay the cost of keeping it up.

Why not begin your system with a few items, such as soaps, rubber gloves, absorbent cotton, gauzes, hospital gowns and uniforms of various sorts, and then add an item now and then as you find it possible or desirable to do so?

In some hospitals heads of departments are required to keep an inventory of everything, to which the superintendent can have access when necessary.

Some excellent administrators have a specified day of the month on which to lay in the month's supplies, and quite a ceremony is made of the occasion; each department head is required to bring in a list of the things wanted, with necessary details, and to discuss the list with the superintendent to satisfy him that the last instalment was economically used, etc. Tradespeople are invited to come in on the afternoon of the same day and talk about their goods and make prices. This is a good plan, in that it gets the whole matter over with on one day of the month and gives the superintendent an excuse not to be bothered with salesmen at any other time. But it has many disadvantages; the salesmen of many good houses will not be able to "make the town" on that particular day without added expense; exceptionally good bargains are to be had occasionally, and if tradespeople know that the superintendent will not consider purchases except on his regular buying day, they will offer their bargains elsewhere.

All these things must be taken into account when thinking about an inventory system, because they are the chief reasons for such a system.

JOHN A. HORNSBY.

The new pavilion of Dr. Depage's hospital at La Panne, Belgium, was recently reduced to a mass of smoking ruins by a fire originating from an explosion of the apparatus for generating gas. The pavilion, with accommodation for 250 patients, had been completed but a few days before its destruction. There were no casualties.

# NEW INSTRUMENTS AND APPLIANCES

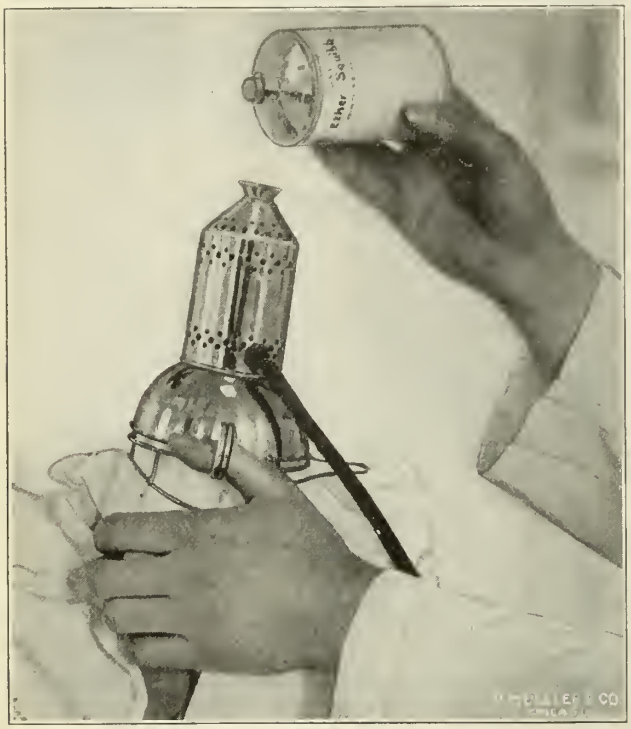
VINCENZ MUELLER, Technical Editor.
GEO. W. WALLERICH, Associate Editor.

## Apparatus for the Administration of Warm Ether Vapor

BY DR. J. W. SNYDER, Michigan City, Ind.

The apparatus devised by Dr. Snyder consists of two parts only: the well known wire mask, to which a dome-shaped metal casing is fastened, reaching part way down over the mask; and the heating coil. The metal tube containing the electric heating coil may be quickly attached or removed from the mask, by a slight turn to the right.

The coil, as may be seen from the illustration, is contained in a perforated metal shell and wound for use on the 110-volt current. This is so constructed that it will reach a maximum temperature and cannot become overheated, even if it stays connected for an indefinite time.



Dr. Snyder's apparatus for administration of ether vapor.

About twenty minutes before starting an anesthetic the attachment plug is attached to any convenient socket and the mask is prepared with layers of gauze. After the coil has reached the maximum heat it is connected to the mask, which is placed over the patient's face. The anesthesia proceeds then in the regular way, except that the ether is dropped through the metal tube on the coil instead of on the gauze direct, and from the coil it reaches the gauze in the consistency of warm vapor.

The ether is to be given more slowly and in smaller doses, inasmuch as it reaches the patient more quickly than when it is dropped cold on the open mask. Consequently the total amount of ether consumed during the course of an operation is only about one-half that by the ordinary open method. The doctor claims that a number of other advantages result from the use of this device, such as the patient going to sleep more easily and without coughing or holding the breath; the absence of mucus from the air passages, except in extremely prolonged cases; great ease in maintaining anesthesia; a brightness in the patient upon awakening and absence of postoperative nausea and vomiting.

## An Improved Dry-cell Battery for Cystoscopy

The usefulness of the dry-cell battery, manifested particularly in its portability and freedom from shock-giving proclivities, has been considerably lessened by two great disadvantages, so far as the illumination of cystoscopes is concerned. The first of these is that the cells require renewal at not very great intervals; the second, that during the latter part of the life of the individual cells the decrease in the amount of current generated is so rapid

Moorehead illuminating battery.

that it is not possible to complete the examination of the bladder without altering the resistance in the rheostat, a procedure fraught with considerable peril to the cystoscopic lamp. The former objection is reduced to a minimum by the use of tungsten cells, which have much more endurance than the older type of cells, while the latter may be entirely done away with by the insertion of a current indicator in the circuit.

The mode of operating this device is as follows: before the insertion of the cystoscope into the bladder the amount of electricity required to heat properly the filament (as indicated by the ammeter, which is mounted in the battery case) is carefully noted. Later in the examination, if the illumination becomes unsatisfactory, a glance at the dial indicates whether the fault lies with the electrical supply or whether it is to be sought in other directions, such as clouding of the medium by blood or pus. If the amount of current indicated be less than that found to be necessary at the beginning of the examination, the remedy lies in reducing the resistance offered by the rheostat till the meter registers the desired amount of current, the change being made without fear of burning out the lamp. If on the other hand the meter should read as at the beginning of the examination, the remedy lies in washing out the bladder or cleansing the lenses, under which circumstances it were folly to risk the destruction of the lamp by increasing the current, as might well be done were the condition

not indicated by the ammeter. Under such circumstances the operator may well be saved the annoyance of inserting a new lamp.

The apparatus was originally constructed to meet the above indication, which it has done in a most satisfactory manner. It has also proved useful in locating short circuits, whether these occurred in the connecting cables or in the cystoscope itself.

The battery illustrated contains twelve small tungsten cells, such as are regularly stocked by electrical supply houses, arranged in a manner to furnish current in the most economical manner possible.

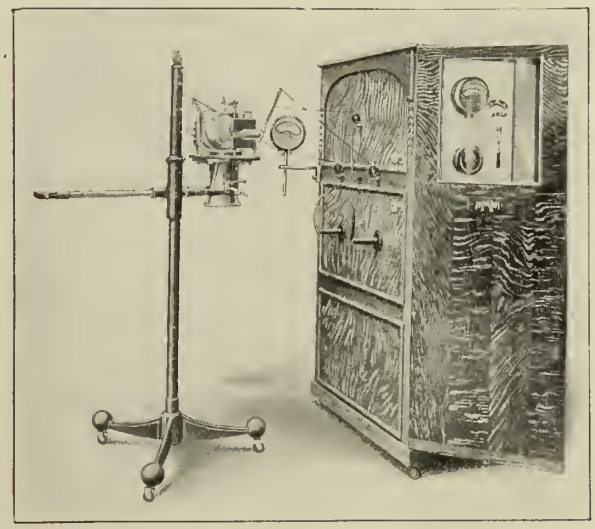
### A New Type of X-ray Apparatus

Members of staff of hospitals will welcome the advent of a noiseless x-ray apparatus which may be placed in close proximity to the operating room without the slightest distraction to the surgeon. This apparatus works on an entirely new principle, and the high tension alternating current delivered by transformer is rectified by an electrical process, without resort to mechanical devices, valve tubes or chemicals of any kind.

The equipment is known as the Hogan Silent X-ray Transformer, and as the makers state, it is interrupterless, motorless, commutatorless and noiseless on alternating current.

With this new apparatus, tubes can be excited to high penetration without inverse, and especially fine results are obtained in soft tissues, revealing pathological conditions in lungs, kidneys, stomach, and so forth.

One of these transformers has been installed for the past nine months in the Washington Park Hospital of Chicago, where it has made a record for the institution in the amount of x-ray work it has attracted.



The Hogan Silent X-ray Transformer.

A unique feature is the lead-lined protective door, which, when swung outward, serves as a screen to the operator, and when closed, occupies but little space. A fluoroscopic screen may be fitted to the outside of the door and the patient placed against it, and by looking through the lead glass window the operator will be able to observe the visceral organs or examine fractures with perfect immunity from the ray. This arrangement costs but a fraction of the price of other fluoroscopic devices.

### Eastman Kodachrome Process as Applied to Medical and Surgical Pathology

Physicians and surgeons often require some means of recording phenomena which come to their notice, and especially phenomena in the progress of skin diseases. The use of photography for this purpose has been limited by its failure to render the color differences which are of such importance in medical work, and it has hitherto been impossible for any one by a study of photographs to obtain information in any way comparable with that which could be got from a direct study of the subject. To make photography applicable to the whole field of medical work it is essential that the record should be made in colors.

Fig. 1. Electric light stand with 750 watt C. P. lamp.

The only process hitherto available to the practicing physician or to the hospital surgeon for color photography was the screen plate process, which involves extremely lengthy exposure and gives a result in which, though the color rendering is excellent, the surface is necessarily broken up by the screen structure, which interferes to some extent with the accuracy of diagnosis.

The principle of the screen plate process is to divide the surface of the plate into a number of microscopic filter units—red, green and blue-violet—and then to take the picture through these units upon an emulsion from which a positive is made either by reversal or by the ordinary photographic methods, this positive being registered with the screen, so that where the emulsion was blackened by exposure through one of the filter units, light is transmitted through that unit in the finished picture. Suppose, for example, that a red object is photographed on a screen plate. Then, where the image of the red object falls, light will pass through the red filter units and will affect the emulsion beneath so that it will be blackened after development, while where the emulsion was protected from the red light by the green and blue units which absorb it no effect will be produced. Now, if the developed negative

be converted into a positive, the portions of it under the red filter units will be transparent, while those under the green and blue filter units will be opaque, so that on viewing the picture the red object will be represented only by the red filter units, the other units being blocked out, and will consequently appear red. The Lumière Autochrome plate represents this process in its simplest form, the filter screen being coated upon glass and the emulsion on top of the screen, while the negative itself is reversed and converted into a positive so that it remains always registered with regard to the screen.

A theoretical investigation showed that for a great deal of work three colors were not really necessary, and this is especially true where the colors to be dealt with are those which occur in medical subjects; namely, the reds and yellows of skin and tissues. For these colors a two-color process should be almost as perfect in color rendering as the three-color process, and would certainly be sufficiently accurate to enable a first-rate idea of the condition of the

Fig. 2. Illuminator in which pictures are placed for examination.

original to be obtained. Clearly, the simplest possible color process will be one in which two negatives taken under two filters are directly transformed into the color positives, the red negative being turned into a green positive and the green negative into a red positive and the two then placed face to face to make the completed picture. Such a process would employ no loose films and only the minimum number of glass plates, and there would be no transferring of pictures from one glass to another. The final difficulty of registering, also, is reduced to a minimum. Moreover, if the original negatives can actually be transformed into color positives, we may expect to retain in the positives all the gradation in the original negatives. The gradation by this process should consequently be as good as can possibly be obtained. Also, since there is no screen and the highlights are represented by clear unstained gelatin, the transparency should be equal to that of a black and white subject.

It will be noticed, however, that this proposed method of working involved one very big step which had never yet been solved; namely, the direct transformation of a negative in black silver into a positive in which the silver of the negative was represented by clear gelatin and the places that were lightest in the negative by a full strength of any colored dye that might be chosen, the transformation being correct throughout, so that all the graduation of the original negative was reproduced in the resulting positive. It was this specific problem of transforming a silver negative into a dye positive, the working out of which made the new Kodachrome process possible. Although the solution now appears simple, it involved a great deal of experiment, small changes in the procedure having much influence on the result, so that a satisfactory process was achieved only by continual experiment.

The method adopted is to make the negatives on panchromatic plates, through the correct filters, and then to develop them as usual. They are then chemically treated so as to remove the black silver and to leave the plate looking just like a colorless sheet of gelatine, showing no sign of an image. Then this plate is put into the specially prepared dye bath. The dye goes into the gelatin most easily where the silver was absent in the negative; that is, where there was least light in the original photograph or in the part represented by deep shadows; while in the parts corresponding to the highlights, where there was much silver in the negative, the dye penetrates more slowly, so that as the dye slowly enters the film, the original negative is transformed into a positive produced in a colored dye. While the one color is made in this way the companion picture is also dyed in the other color, and the two when placed together make the finished picture. The process is thus seen to be simplicity itself, the novel point of it being the method for transforming a black and white negative image into a colored dye positive.

The results obtained by this process are very satisfactory in dealing with such subjects as are required in medical work. The pictures appear at their best when placed in a special illuminator, and for this reason illuminators are provided which light them evenly from behind by electric light. The process cannot be used for the production of paper prints, and in most cases it is convenient to transform the original negatives into the finished positives, as has already been described; but, if desired, duplicates can be made by making contact positives from the original negatives, before bleaching, from which new negatives are printed, which are then transformed into the color images. The results obtained are quite permanent, the colors being fast against both light and heat. While the process was originally introduced for professional portraiture, its application to the science of pathology, in the study of intricate or involved cases, was immediately recognized. Members of the medical profession who have seen the results are enthusiastic in their comments and pronounce the Kodachrome process to be of special value in recording the progress of skin diseases. The results under treatment may be studied with almost the same accuracy possible from examination of the subject.

In the study of pathological specimens and dissections of the human body in applied anatomy, this new process in color photography opens up an extensive field to all students and practitioners of medicine and surgery. It will also materially aid the specialist in nervous and mental diseases in the study of facial expressions, and the surgeon in illustrating work in the operating room.

The equipment for taking Kodachrome pictures, for medical and surgical purposes, is an 8x10 camera, an electric lamp of 750 watts c. p. (Fig. 1), an illuminator in which the pictures are placed for examination (Fig. 2), and the necessary plates, chemicals, etc.; and we are informed that the total cost of such an equipment is from $394.00 to $415.00.

# THE HOSPITAL KITCHEN

Any questions regarding equipment or other matters connected with the kitchen and dependent departments of food storage and service will be answered in this department. Address communications to The Modern Hospital, Kitchen Department, Metropolitan Building, St. Louis.

## Electric Cooking Appliances[1]

(Second Article)

BY HARRY G. WEEKS, E. E.
Designer and Consulting Engineer in Electrically Heated Appliances, Chicago, Ill.

Probably the electric cooking appliance most in use at present is the combination electric griddle and toaster. The advantages of an electric griddle and toaster are, first, the quick heating attained by the method of first using the high heat, then shutting off, leaving the second heat to do the work; and secondly, the entire absence of the gas fumes which, in the case of a gas griddle and toaster, are disseminated in the room, owing to the fact that there is usually no flue on such a griddle. The heating on an electric griddle is absolutely regular, so that the cooked product is uniform. When toast is desired, the intense

Fig. 1. Electric griddle.

heat gives that rapidity of action which is essential to good toast, quickly searing the outside without drying out the inside of the slice, or the toast can be made crisp clear through.

In hospital practice the electric griddle and toaster attains its greatest utility in the ward kitchen. Toast can be made on it, steaks, ham or bacon broiled on it, and the top griddle used for heating any cooking vessels; in fact, any cooking operation except baking can be accomplished on it. In a ward kitchen, owing to the intermittent use of the appliance, the amount of current consumed per day will not be very large for the reason that when not in use the current is shut off, so that the cost of fuel is hardly any higher than gas.

To secure durability of construction the top of the combination griddle, broiler and toaster should be of cold-rolled steel, polished down until it is perfectly flat, and the body of blue Wellsville steel with bands of cold-rolled 16-gauge steel at top and bottom, polished, nickel-plated and buffed. The upper band should carry a nameplate on it, on which should be stamped the electrical rating in volts and amperes (this being an underwriters' requirement). The body should be provided with several ledges about an inch apart to carry the broiler rack and drip pan, so that these can be slid in on the ledges at any desired distance away from the heating element. The lowest ledge can be used as a Salamander for preparing foods au gratin.

The heating element is designed to give uniform heat on every one of the three different degrees of heat regulation. The regulation should be by means of an indicating dial switch which reads, high, medium, low, off. The connecting cables should be specially constructed so as to have no rubber in them, but should be composed of asbestos wrapping and an asbestos braid over all, made watertight by an asbestos cement. The conductors should be carried in conduits to meet underwriters' requirements and be located so as to be free from danger of mechanical injury. This appliance should be wired in permanently, but when desired it may be provided with attaching plug.

Fig. 2. Combination electric griddle, broiler and toaster.

Fig. 1 shows one of the latest types of electric griddles and toasters on the market. They are made in three sizes: 12x18, 18x24 and 24x30 inches, with three heats, which gives a sufficient range of temperature.

Like most of the electric appliances in the market, the griddles and toasters hitherto made have lacked the substantial qualities essential to the heavy duty of hotel, restaurant and institution work; but the modern griddles made under the above specification are substantially made and dependable.

The current consumption is:

| Size | Watts per hour high heat | Watts per hour medium heat | Watts per hour low heat |
|---|---|---|---|
| 12 x 18 | 1,500 | 750 | 375 |
| 18 x 24 | 3,000 | 1,500 | 750 |
| 24 x 30 | 3,600 | 1,800 | 900 |

A steak one inch thick will be finished in from eight to ten minutes; toasting will take from two and a half to three minutes.

The griddle shown in Fig. 2 is made also without the toasting and broiling space below, but the extra cost of this toasting and broiling space is amply compensated for in

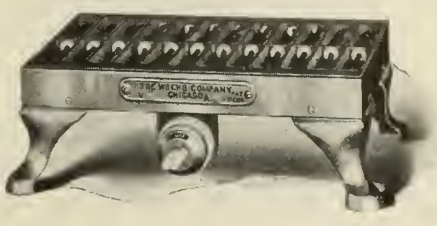


Fig. 3. Electric grill or hot plate.

the more varied uses to which the complete appliance, as shown here, can be put. The cost of the griddle alone is only about half that of the combination griddle and toaster, but it can be used only as a hot plate for making cakes, etc., and consequently its range of utility is limited.

[1]The first article by Mr. Weeks was published in the June issue, page 445.

The sizes and the current consumption are the same as those of the combination griddle and toaster.

ELECTRIC GRILL AND HOT PLATE

The appliance shown in Fig. 3 is called a grill or a hot plate. It consists of open coils stretched between the bars of an open cast-iron grill. It can be used for either toasting or as a hot plate for boiling or frying, or a small oven can be set on it for small baking operations. These appliances are made in two sizes, 10x15 inches and 10x30 inches, taking respectively 1,500 and 3,000 watts per hour on high heat, 750 and 1,500 watts on medium and 375 and 750 watts on low heat, per hour.

Fig. 4. Combination electric grill, broiler and toaster.

Fig. 4 shows the same appliance as does Fig. 1, except that the open grill top of Fig. 3 is superimposed on the toasting and broiling bottom shown in Fig. 1. This appliance will be found useful where a cake griddle is not necessary and a more quickly acting hot plate is desirable. With this appliance toast can be made both above and below at the same time. The small size will turn out toast at the rate of 300 slices of toast per hour with a current consumption of 1½ kilowatts, which, with electricity at 2½ cents per kilowatt, makes a cost of .001 of one cent per slice.

Fig. 5. Electric egg boiler. Water at 180° F.

Fig. 5 shows an electric egg boiler. In order to avoid an excess of steam in the room and to cook the eggs at a temperature not too high for the best results, the heating is so arranged that the temperature cannot rise above 180 degrees F. The timers are graduated so that it is possible to boil eggs from a half minute to six minutes. Six minutes' boiling, with water at 180 degrees, gives an egg thoroughly cooked, but not hard. On the top of each timer there is a timing rod on which are the graduations. The rod is first set at the time desired. A spring catch engages the rod which holds it in the set position. The bucket holding the eggs is then lowered into the water. At the predetermined time the timer releases the bucket and a weight draws it out of the water.

The timers are made entirely of brass with the one exception of a phosphor bronze spring. On account of the tendency to rust out, no steel parts should be used. A recent improvement is the rubber cushion under the weight, which reduces to a minimum the jarring effect on the timers and insures a longer period of accuracy. The boilers are fitted for from two to six timers. Each timer will take care of three eggs at a time. The boilers are made of heavy copper, polished and nickel plated.

Automatic egg boilers heated by gas or steam coils have been in use a long time, but in these the water is always at 212 degrees and gives off steam in the room.

The current consumption to maintain the water at 180 degrees F. is as follows:

4-bucket egg boiler.....1,500 watts per hour
3-bucket egg boiler.....1,000 watts per hour
2-bucket egg boiler..... 500 watts per hour

The heating of urns for coffee, etc., by electricity has been in use for some time. The heat unit is placed on the bottom of the urn, and the three heats provided are controlled by switches. The current consumed will be approximately as follows:

| Gallon capacity | Watts high heat | Watts medium heat | Watts low heat |
|---|---|---|---|
| 2 | 1,000 | 500 | 250 |
| 4 | 2,000 | 1,000 | 500 |
| 6 | 3,000 | 1,500 | 750 |

With the high heat turned on the urn full can be brought to boiling point in 30 minutes and the temperature maintained with the medium or low heat.

## A Diet Kitchen to Serve From Thirty-five to Fifty Persons

BY P. B. SCHWEIKERT.

The accompanying plan shows the equipment necessary to take care adequately of the diet work for thirty-five persons, or up to fifty if necessary.

A range, the body of which is made of cast iron, will be found to be very much more durable than one made of sheet iron, and when finished in black enamel is easily kept clean and requires no stove polish except on the actual cooking surface. The range shown has six holes on the cooking surface and one large and one small elevated oven with a broiler and toaster below the larger oven. The smaller oven can be used as a plate warmer if desired. The bottom of the larger oven should have a removable griddle plate in it and a damper in the flue to be opened when the griddle is in use, so that cakes can be made when desired. The broiler and toaster should be removable in case it is desired to set high cooking utensils on the back of the stove. When it is desired to boil anything with an odor, such as cabbage, etc., this can be done on the plate in the oven, and the door shut and the flue opened so that no odors can come into the room. The oven should be furnished with an oven thermometer. The cooking surface of the range should not be over 28 inches from the floor, so that the oven will not be too high up.

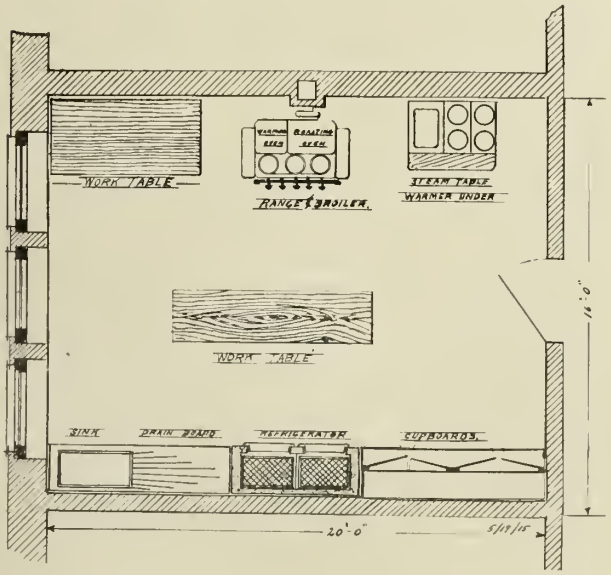
Sheet iron ranges are about 33⅓ percent cheaper than cast iron ranges, but because of the greater thickness of

material used in the latter their life is longer, and delicate bakings like cakes, etc., do not burn on the bottom as they do in ovens in which thinner material is used.

The steam table shown is 42x24 inches and contains one meat panel with cover, and two vegetable panels, each containing two vegetable jars with covers. The panels should be of cast iron, porcelain enameled, and should be provided with water rims to form seal, etc., to prevent the steam from getting out into the room. The water pan should be constructed of either 32-ounce copper or 14-gauge genuine charcoal iron, but should never be of steel or of light weight copper inside a steel pan. A waste outlet should be provided as well as an inlet water tap for refilling or flushing. The waste outlet should always be at the opposite end from the refilling tap.

The steam table can be mounted on legs, with a shelf beneath, or on a plate warmer with sliding doors. It is better, to lessen the stooping, and to make easier access for cleaning, to have the plate warmer above the table; and where appearance is to be considered the whole can be finished in white porcelain enamel on steel, trimmed with nickel bands.

The refrigerator shown is 5 feet wide, 28 inches deep




Plan of diet kitchen to serve 35 to 50 persons. Specially designed for the THE MODERN HOSPITAL by P. B. Schweikert.

and 8 feet 6 inches high; this size may be larger than is absolutely necessary, but it will afford all the storage likely to be required for a diet kitchen of this size. The subject of refrigerators has been dealt with in a previous article in this department.

The work table shown is 6 feet by 3 feet, and may have either a steel top or one of not less than 1⅜-inch maple, mounted on iron-pipe legs with a galvanized iron shelf underneath and a drawer.

A cupboard, 7½ feet by 28 inches, at the bottom, with a shelf and cupboard 15 inches deep above, the whole 8 feet high, is shown on the plan.

A sink and drain board is also shown, placed next the window. This will always be found when practicable to be the best position for a sink, as good light is essential.

The kitchen shown on the plan measures 16 feet by 20 feet, and is large enough for a table 2 feet by 8 feet to be placed in the middle of the room and still leave 4 feet of working space on either side of it. The equipment shown can be set in a room 16 feet by 12 feet, which would accommodate thirty-five persons; but for fifty persons the larger room, with a table in the center, would be preferable.

The door of a diet kitchen should not be less than 3 feet 4 inches wide in order to give room to pass in and out with loaded trays; and there should be as much window light as possible. Where the floors are of concrete they should be finished with a hard top coat, water and grease-proof.

## GRADUATE NURSES ARE CONTRACT LABOR

### Federal Immigration Bureau Decides They May Not Be Brought From Canada to Serve in Salaried Positions —Decides Also That Nursing Is Not a "Recognized Learned Profession"

Some months ago the immigration agent at Cleveland, Ohio, found fault with the municipal hospital of that city because its superintendent had advertised in some Canadian newspapers for pupils for the training school. Hon. Newton D. Baker, Mayor of Cleveland, took the matter up in an exhaustive legal argument with the federal authorities and obtained from the Department of Labor a decision that the advertisement for, and the bringing in of Canadian girls as training school pupils was not in violation of the contract alien labor law, and might be continued. Nothing was said in the course of this controversy about graduate nurses who might be engaged in Canada to serve in salaried positions in the hospitals of the United States.

As soon as the facts of this controversy were published in THE MODERN HOSPITAL, in the April, 1915, number, Mr. George B. McCallum, secretary of the Cooley-Dickinson Hospital of Northampton, Mass., feeling that there were incongruities between the published decision and a decision which had previously been received by him personally, wrote to the Commissioner, and the reply, when it came, contained such definite statements as to the attitude of the department that he sent the letter to THE MODERN HOSPITAL for publication. It is as follows:

U. S. Department of Labor.
Bureau of Immigration.
Washington, May 1, 1915.

Mr. George B. McCallum, Secretary
The Cooley-Dickinson Hospital,
Northampton, Mass.

Dear Sir: Answering your letter of the 24th ultimo the Bureau has to state that it has never seen the article to which you refer as appearing on page 294 of the magazine called THE MODERN HOSPITAL. However, the Bureau can state in a general way what the recent decisions of the Department with regard to the admission of trained nurses to the United States have been.

Several years ago it was held that women who were being trained in hospitals as student nurses could be admitted to the United States without violating the alien contract labor provisions of the immigration act. Several months ago it was discovered that the privileges accorded in this decision were being materially and seriously abused; that several large hospitals in this country had established a regular practice of sending to Canada for trained nurses and hospital attendants, not for the purpose of having them attend their training schools for nurses, but in order that they might work in the hospitals as nurses already trained or as mere attendants who were in no sense students of nursing; that by this means the said hospitals were able to obtain help of the kind required at wages much lower than they would have to pay women and girls already located within the United States to induce them to accept the positions. Obviously this constituted a violation not only of the letter but of the very spirit of the contract labor law, which was intended to prevent the importation of aliens to take positions in the United States that could, and otherwise would, be filled by persons already located here.

The purpose of the recently rendered decisions, therefore, has been so to apply the law as to prevent the abuse which had arisen because of the Bureau's liberality in admitting student nurses, and to restrict the admission of aliens connected with the vocation of nursing to those coming here for purposes of study rather than to take remunerative positions and to compete with local nurses and attendants.

With respect to the law bearing upon this subject the following might be furnished for your information:

Section 2 of the Immigration Law (Act of February 20, 1907) provides that:

"Persons who have been induced or solicited to migrate to this country by offers or promises of employment or in consequence of agreements, oral, written or printed, expressed or implied, to perform labor in this country of any kind, skilled or unskilled,"

are to be considered contract laborers and excluded. A proviso to the same section reads:

"That the provisions of this law applicable to contract labor shall not be held to exclude professional actors, artists, lecturers, singers, ministers of any religious denomination, professors for colleges or seminaries, persons belonging to any recognized learned profession, or persons employed strictly as personal or domestic servants."

This proviso to the law constitutes a specific guide for the Department, and aliens applying for admission to this country to accept prearranged employment who do not fall within the classes enumerated in the exception must be refused admission; for special exceptions of this kind must be construed strictly against those seeking the benefit thereof; or, as the Supreme Court puts it in a recent decision, "the section (Sec. 2) contains its own specific provisos and limitations, and these, on familiar principles, strongly tend to negative any other and implied exception" (Lapina v. Williams, 232 U. S. 78, 92). Nurses are not specifically mentioned in the exception, and the Department has held that nurses do not belong to a *recognized* learned profession.

Respectfully,

ALFRED HAMPTON,
Acting Commissioner-General.

Attention is called to the last sentence.

## HINTS FOR HOSPITAL SUPERINTENDENTS.

Do not allow anybody to persuade you to put cheap plumbing into your new fireproof building. The day of iron or steel pipes has gone by. They not only corrode and eventually wear out, but they are constantly giving off red rust water that is objectionable. We are using now white metal, made of nickel and copper, or, at the very least, we are using nickeled brass; or, for hidden plumbing, the pipes need not be nickeled. Brass and white metal do not corrode, and in new construction, where the pipes are hidden in concrete, as in some places, and in rises in the walls at others, it is an extremely difficult thing to get at these pipes to change them, and if they are made of steel or iron, it is certain that they will have to be reached after two or three years.

And don't let anyone sell you cheap plumbing fixtures. We often are limited for money when we are building a hospital, and instead of saving on ornamentation and things that look pretty, we are disposed to save on the quality of our fixtures and equipment of various sorts. This is a costly saving. Cheap faucets and cheap fixtures of various sorts wear out very quickly; bath tubs, basins and lavatories are the last things on which to economize by putting in inferior goods. The cheap enameled fixtures break down after two or three years, either by checking and turning yellow and finally black, or the enamel wears off completely and leaves the bare steel. They are making porcelain china now that costs more than enamel, but far less than the old expensive porcelains, and these new porcelains will wear indefinitely and always look well. It is generally a good deal easier to get money to build a hospital than it is to find money to make up deficits from year to year, and when we put in cheap fixtures our expensive repairs begin after a couple of years of wear, and the up-keep account becomes a very large item in our running expenses. We ought to build so that the repair bills will be negligible for eight or ten years anyway.

A little initiative on the part of the superintendent of the hospital will often save considerable sums of money. Little architectural changes may be needed, and too often we think we must go to an architect and have a plan made and take bids and let a contract; whereas many of these changes could be made by our own mechanics. Generally the engineer is an all-round handy man who can do a lot of things that too often we call in experts to do.

The attic and lumber rooms of many hospitals are stored with stuff that we call "junk" and very often these things could be made to serve useful purposes, if we just exercised a little ingenuity. Door frames and doors, window frames and windows can often be used, saving the purchase price of new things, and saving also the employment of experts to instal them.

Are you quite sure that your hospital is a blessing to its community? You can only be sure of this if you are certain that you are getting good results in your medical and surgical work. How are you going to know whether you are getting good work or not? The only way is to have your histories and records well written, diagnoses and results clearly stated on the discharge of the patient, and then follow cases into the homes of the patients. The cases that come back for a second and third operation are worth looking into, and it is these cases that will come nearer to giving you a line on the kind of work that your surgeons are doing than anything else.

It is coming on summer time, and we should think about the preservation of our ice supply. Our refrigerators, during the winter, spring at the hinges, the door fastenings get loose, leaving cracks to admit warm air, and the entrance of warm air melts the ice and raises the temperature of the refrigerator. A few hours' work over the house will often put all our refrigerators in good order so that the ice will last much longer, and things will keep much better.

Sometimes we want more refrigerator room, and we think about buying an expensive ice box or refrigerator. Very often we can take part of a room that is too large for its present purposes, run up a partition of three-inch vitrified tile or gypsum, and insulate the lining of it so that we can have a very serviceable cold storage room. After the partition is up, a line of upright two-by-fours can be put all around this new room, with two-by-fours on the ceiling, also some plain boards nailed on to these, some cork or asbestos paper, or even tar or oiled paper laid over those, and then a layer of tongue-and-grooved flooring can be put on. This will make very good insulation, and if a double door with air space between the layers is added, we will have a room which, when three or four good cakes of ice are put in, will keep things cold and nice.

The front office and the telephone booth can be counted on to indicate clearly the kind of hospital one is entering. If the business office allows patients to stand around, and find out things the best way they know how, and allows sick people to hang around the office until it is convenient to take them upstairs, you can be pretty sure that the whole management of the hospital is slipshod and slovenly. The difference in wages between a good telephone girl and a worthless one is three or four dollars a week, and yet there is hardly a day that a good telephone girl could not earn her whole week's salary by being alive on her job. Very often a doctor will call up to send a patient in; if he cannot get good service through the telephone, he may persevere once or twice, but he will finally begin calling up that hospital where he can get prompt action through to the party with whom he must make arrangements. This good and bad telephone service goes clear through to all parts of the house. If a doctor knows that he is going to find it almost impossible to get his intern or nurse he will want to patronize a hospital that will give him decent service.

# THE MODERN HOSPITAL

*A Monthly Journal Devoted to the Building, Equipment, and Administration of Hospitals, Sanatoriums, and Allied Institutions, and to their Medical, Surgical, and Nursing Services*

Vol. V *September, 1915* No. 3


## THE GEORGE F. GEISINGER MEMORIAL HOSPITAL, DANVILLE, PA.

### Five Principal Buildings, Carefully Designed, Substantially Constructed and Liberally Endowed, Give Promise of a Most Effective Hospital Service—Donor's Instruction to Build the Best

By HAROLD L. FOSS, M. D., Rochester, Minn.

On a hill overlooking the town of Danville, Pa., whence a view is obtained for several miles east and west along the beautiful Susquehanna Valley, is nearing completion a hospital which, for the beauty of its architecture, its scientific and modern arrangement and the completeness of its equipment, is destined to take a position in the front rank of modern American hospitals.

This splendid institution is the result of the munificence of Mrs. Abigail A. Geisinger, of Danville, who, in the autumn of a long and useful life, has caused to be erected the George F. Geisinger Memorial Hospital, the cornerstone of which was laid on the first of September, 1913.

It is now about three years since Mrs. Geisinger called together in the parlor of her Danville home three of her townsmen and unfolded to them a plan for building, as a gift to her town and as a memorial to her husband, a hospital. These men were W. M. McClure, Thos. J. Price and J. H. Brugler. Mr. Brugler became the architect of the new institution, and the other two the building committee. Dr. J. M. Baldy and Dr. H. L. Foss shortly after were called in as professional consultants. After many sketches had been submitted, a general scheme was decided upon and draftsmen set to work on the final plans. From Mrs. Geisinger, whose enthusiastic interest in the work has never for a moment relaxed, was received the broad general instruction, "Make my hospital right; make it the best."

A plot of thirteen acres on a hill overlooking the town was purchased and there have since been erected on this ground five buildings. These consist of a main hospital building, a nurses' home, a power house, a garage and a research building. The construction and general design of the units of the group are uniform throughout. The foundations are of reinforced concrete, while above the construction is of light Kittanning brick with trimmings of gray Ohio sandstone. The main building faces directly south and has a frontage of two hundred and forty feet. Its central portion is four stories in height, and the wings, extending east and west, are of two stories. Space has been provided for seventy beds, although ample provision has been made for an increase of the number to eighty-five. To the west of the main building stands the nurses' home, a two-story structure of some thirty rooms. North of the main building is located the power house, in the upper story of which is the laundry. To the north and east are the garage and stables and the research building.

The hospital stands upon a terrace and is approached by a broad flight of stone steps. The entrance to the administration wing is of colonial design and is guarded by eight massive Corinthian columns of gray sandstone, supplemented by corresponding pilasters, forming an imposing portico. Passing through the main entrance one finds oneself in a wide corridor with floor of tile and wainscoting of white Vermont marble; here on either side are located the main waiting room, the business office, the library, the office of the superintendent and the office of the chief nurse.

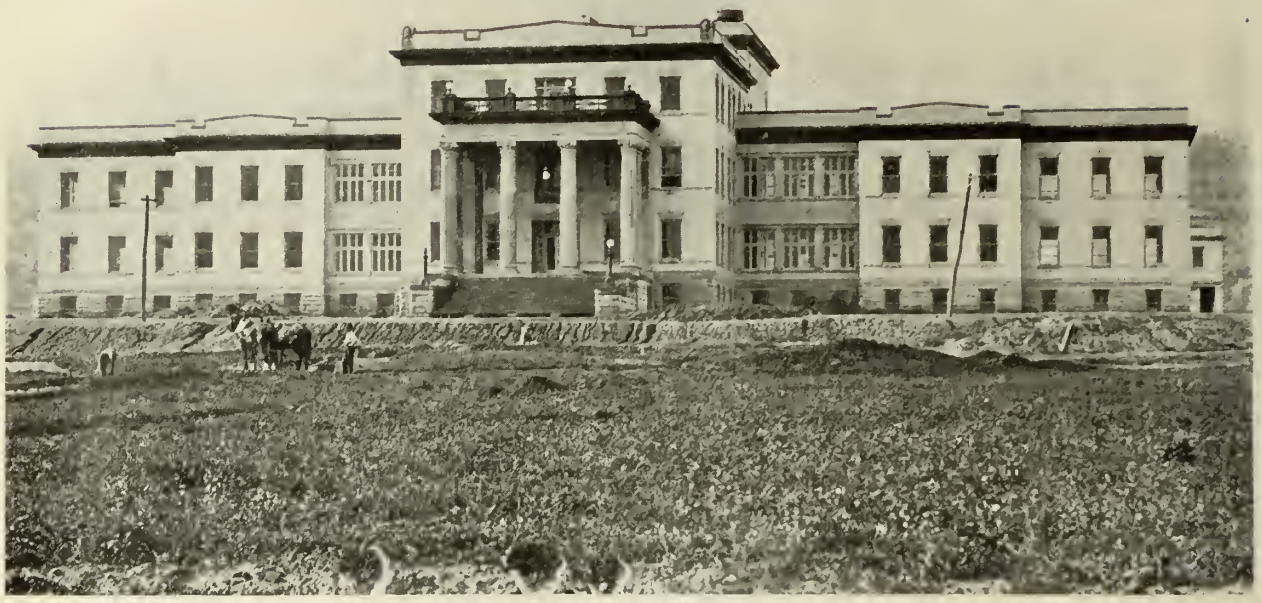


Fig. 1. George F. Geisinger Memorial Hospital, Danville, Pa. Main building.

Three of the rooms on the left side of the corridor are separated by folding doors so that they may be made one, creating an assembly room of about fifty by twenty feet. This has been planned with the idea of providing a suitable place for the holding of scientific meetings. The room is wired from a motor-generator in the basement so that direct current may be furnished for the operation of various projection apparatus.

Fig. 2. George F. Geisinger Memorial Hospital, Danville, Pa. Nurses' home.

A wide corridor extends through the building, east and west, for its entire length. At its ends are located the wards, four in all. A fifth ward for children is situated in a north wing. Between the administration building and the wings, on the east and west and on two floors, are to be found large sun rooms. These are enclosed in glass and in the winter are heated by steam. The entire south wing of the first floor is devoted to the administration department, but with the exception of this the first two floors are devoted to the housing of patients. There are five ward units, each consisting of a ward, a ward nurse's office, a diet kitchen, a bath room, and a service room. Each ward is arranged for eight beds, is of liberal dimensions and receives light and ventilation from three sides of the building through nine windows. Each ward office, though cut off from the ward by a sound-proof window, is so arranged that the nurse on duty has a complete view of the patients under her care at all times.

There are eighteen private rooms, several being arranged with private baths. A complete system of nurses' call signals has been installed by the Holtzer-Cabot Electric Co., and every bed in the hospital has its own button and number. Colored lights are used as signals and a pilot board in the head nurse's office in the administration wing indicates at all times the promptness, or lack of it, with which calls are answered by the nurses on duty. All the private rooms are wired for long-distance telephones.

The main building has a sub-basement, a basement, and, in the wings, a first and second floor. The central part of the building is carried up two more stories above the wings. On the third floor, in such a location that the odors of cooking are carried away, is the main kitchen. This is a large, well lighted and perfectly ventilated room,

Fig. 3. George F. Geisinger Memorial Hospital, Danville, Pa. General view.

equipped with the most modern apparatus for gas and steam cooking. On the same floor with the kitchen and within easy reach of it, is located the refrigerator, composed of three rooms and chilled with brine circulated from the power house. An automatic electric dumbwaiter connects the main kitchen with the floors below. On the third floor is also located the main dining room for the staff and the apartments of the superintendent.

The basement, or rather the semi-basement, its floor being but three feet below grade, contains some of the most interesting departments of the institution. Here are located the laboratories of pathology, the x-ray department, the accident room, the cystoscopic room, the hydrotherapeutic department, the plaster room, etc. All these departments have been planned with the greatest care and according to the most modern practice. The equipment throughout is complete. In the x-ray department the transformer, with its rectifying switch, is located in the sub-basement. The connecting wires are carried up through mica conduits to the floor above, where they supply current to the vertical and horizontal fluoroscopes, the stereoscopic tables, etc. The isolation of the transformer renders the operation of the apparatus practically noiseless and removes a rather objectionable feature of most x-ray installations. The walls of the department are covered with sheet lead placed beneath the plastering. The cystoscopic room is close at hand and wires lead to it from the main x-ray transformer to supply current in connection with the making of pylo-uretograms. In the group of rooms making up the x-ray department is a large and well ventilated dark room and a separate room for the examination and storage of plates. On the same floor with the departments just described is a lecture room fitted out with projection apparatus, charts, models, etc., where instruction will be given to pupil nurses. The laboratories are unusually spacious and well equipped for a hospital of the size. Provision has been made for the most advanced pathological and bacteriological work. In connection there is a department for photography and micro-photography.

On a level with the ground floor, but in a separate wing of the building, having its entrance without the main hospital, is situated an isolation department. Here can be isolated such contagious cases as may be discovered in the house.

Fig. 4. George F. Geisinger Memorial Hospital. Research building.

The receiving or accident room is situated on the ground floor opposite the ambulance entrance. The room is fully equipped for the prompt handling of accident cases and has its own sterilizing and operating outfit so as to be independent of the main operating room.

Occupying the entire south wing on the second floor is the operating suite, consisting of the main operating room, the sterilizing room, a wash room, a supply room, two anesthetizing rooms

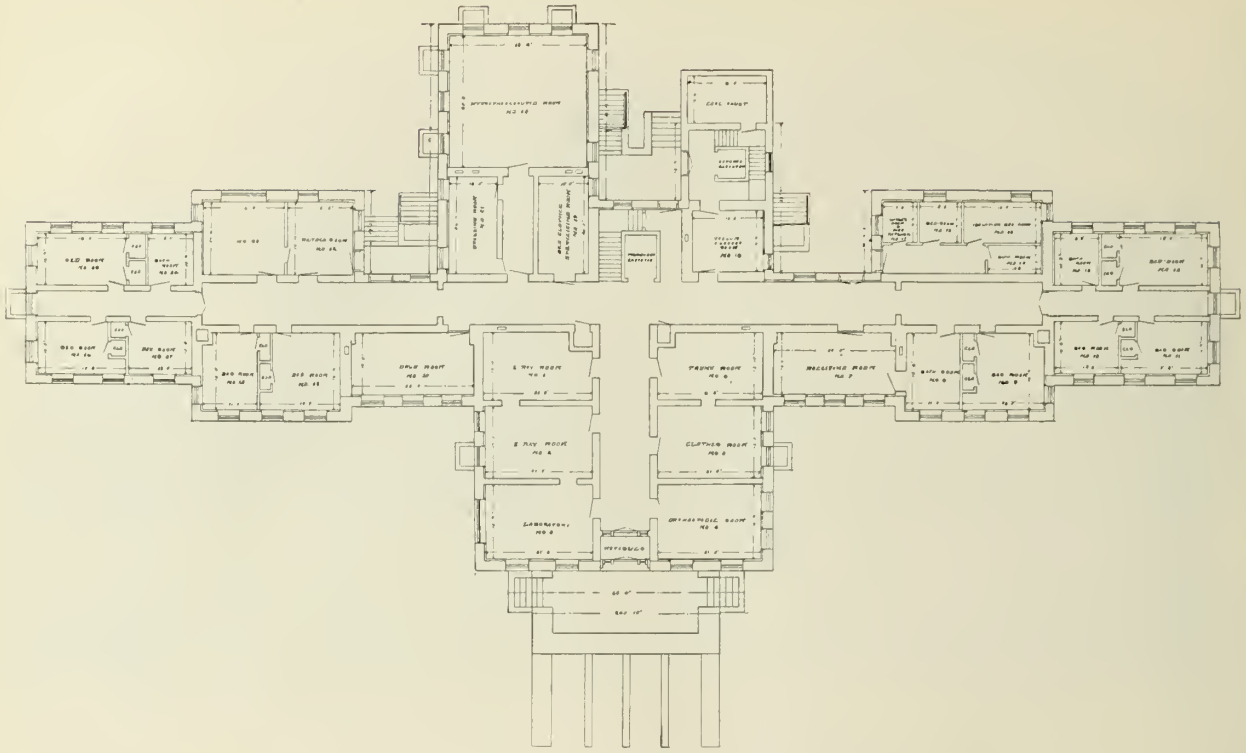


Fig. 5. George F. Geisinger Memorial Hospital, Danville, Pa. Basement plan.

and the surgeon's dressing rooms. Connected with this department is a fresh-tissue laboratory equipped with freezing microtomes. The operating room is of ample size, is piped for sterile water, nitrous oxide and oxygen, and compressed air. The flooring is of tile, the wainscoting of white Vermont marble. Splendid illumination is furnished from a large ground plate glass window in the north wall and a ten-foot skylight overhead. At night light will be furnished by a set of Bartlett reflectors. The operating table is of the Balfour pattern, occupying a fixed position in the center of the room. Pipes placed beneath the tiling carry sterile water directly to the table, while conduits containing various wires supply current to plugs set into the table itself for the operation of cauteries, illuminators, motor-driven apparatus, etc. The wash sinks in this room are piped for sterile water directly from the tanks in the main sterilizing room. The latter is finished like the operating room, in tile and Vermont marble. Here are situated the hot and cold water sterilizers, the instrument sterilizer, the dressing sterilizer and the sterilizer for the handling of utensils. All the apparatus is operated by high-pressure steam and is supported from the wall on steel brackets. The dressing and water sterilizers exhaust to the outside air through a Hendrickson device. Besides the main sterilizers there is in each of the five ward offices an electric instrument sterilizer.

On the flat roof over the east wing a roof garden has been provided for convalescent patients.

The walls of the entire building are finished in enameled plaster. The floors in the basement are of terrazzo and those in the corridors and in the wards are of battleship linoleum. The private rooms are laid in hard pine. All bath and toilet rooms have tiled walls and floors. The building is provided with forced ventilation, while the heating is by steam and the lighting by electricity. Most of the lighting fixtures throughout the institution are of the indirect type.

An elaborate system of telephones and signals has been installed. The institution has its own switchboard in the main office, serving about sixty lines. At the side of the main board there has been erected by the signal device makers a board of special design on which is located the "in and out" annunciator from which the operator tells at a glance just what members of the staff are in the building. On the same board is mounted a telegraph key by which the operator can send code signals over any one or all of eight separate circuits connecting fifty tickers placed in various departments of the five buildings. Every member of the staff will have his or her own signal, and by this system can be found at a moment's notice.

The nurses' home stands to the east of the main building. It is a brick and stone structure of two stories, having room for about thirty nurses. Each nurse is given a room to herself, and all the

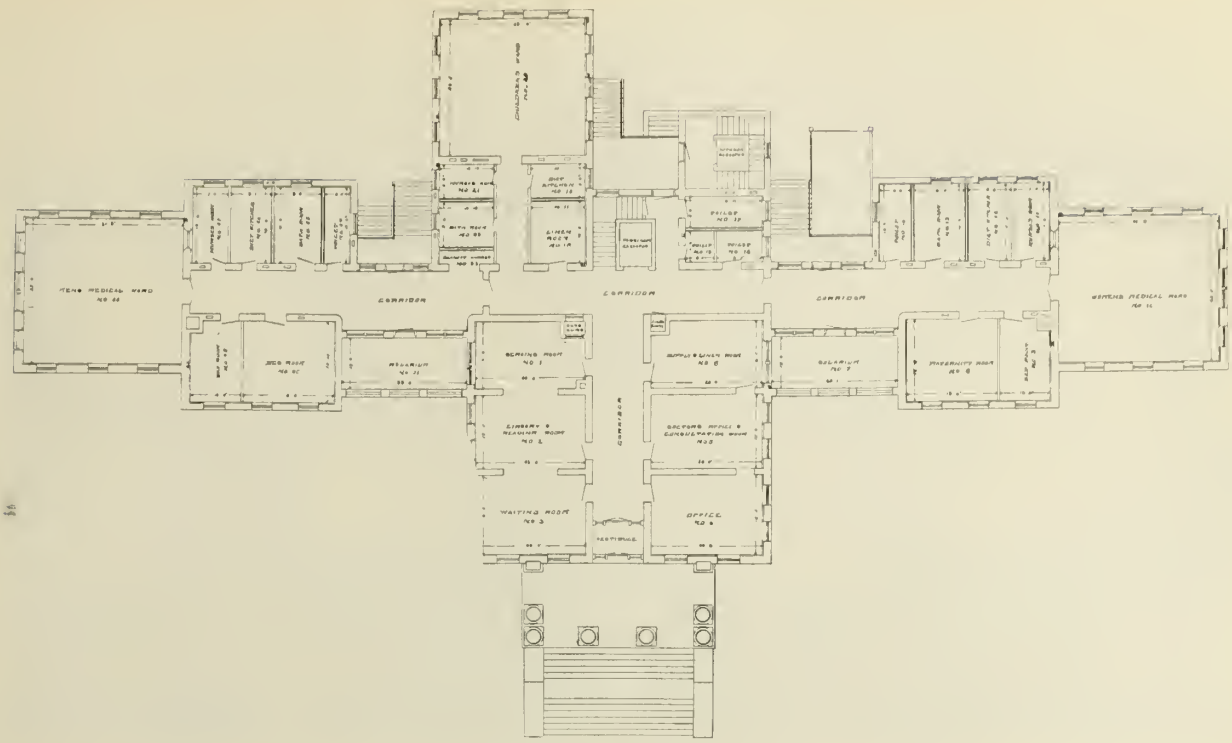


Fig. 6. George F. Geisinger Memorial Hospital, Danville, Pa. First floor plan.

rooms are connected by telephone with the apartments of the chief nurse. On the first floor are three large rooms arranged for the convenience and comfort of the occupants of the building.

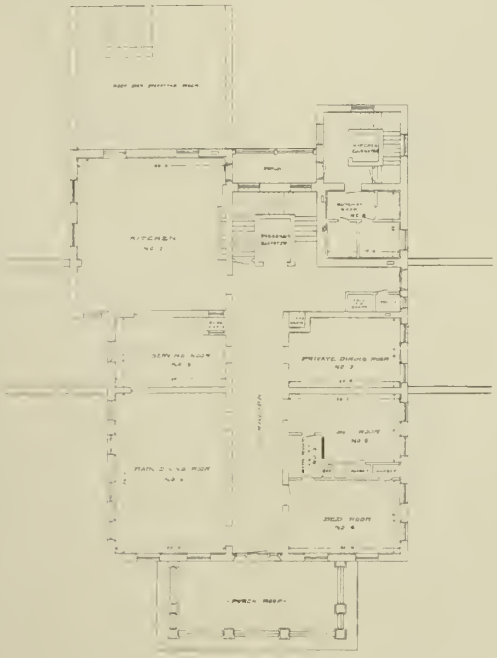


Fig. 7. George F. Geisinger Memorial Hospital, Danville, Pa. Third floor plan. (To right and left is roof.)

Here is to be found a fireplace, a piano, a Victrola, a library, writing desks, etc.

The power plant and laundry are housed in a building together. On the upper floor is located the laundry, fitted with the most modern electrically operated laundry machinery. In this department is a large sterilizing washer for the handling of badly infected clothing. On the same floor is a steam and formaldehyde mattress sterilizer. In the basement of the power house are three one-hundred-horsepower, high-pressure boilers. These furnish steam for the five buildings, pipes being led through tunnels to the various divisions of the institution. In the engine room are located the various feed and vacuum pumps, the refrigerating machinery, which pumps chilled brine to the various diet kitchens, the ice-plant for the manufacture of artificial ice, and the emergency lighting plant. Current for lighting the institution, as well as for operating its thirty or more electric motors, is admitted to the building over a high-tension line carried in conduits beneath the ground. A room in the sub-basement contains the transformers for stepping the current down to one hundred and ten volts. A separate transformer supplying no other apparatus furnishes current to the high-tension transformer in the x-ray department. In case of an emergency, current will be furnished to the hospital by a ninety-horsepower direct-connected generator in the power house.

The main hospital and the nurses' home are cleaned by vacuum apparatus. A 12x16-inch vacuum pump is located in the basement and is connected to numerous outlets on the various floors of the two buildings mentioned. The machinery is electrically driven and can be started and stopped from any one of the various outlets.

Fig. 8. George F. Geisinger Memorial Hospital, Danville, Pa. Second floor plan.

In the main building there is a large elevator for carrying beds and wheel stretchers; also one for freight, and a dumbwaiter serving the diet kitchens. All are electrically operated and are automatic.

In the rear of the hospital is located the building containing the garage and stables. In the garage room has been provided for four cars. There is a specially constructed Packard ambulance, together with a smaller horse-drawn ambulance. The second floor of the garage is given over to the quarters of the male help.

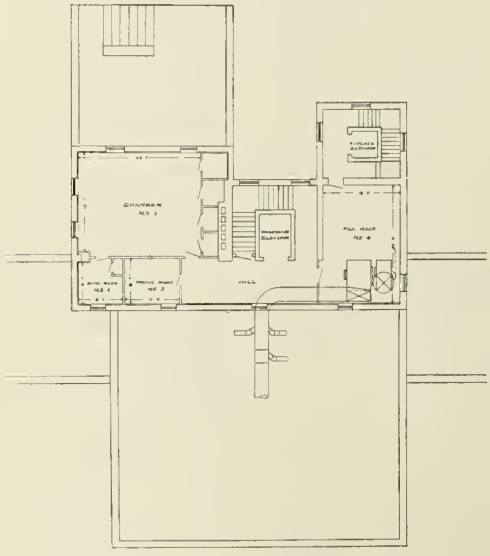


Fig. 9. George F. Geisinger Memorial Hospital, Danville, Pa. Fourth floor plan.

The fifth building of the group is equipped for the making of post-mortem investigations and for experimental research.

When the Geisinger Memorial Hospital was projected its generous donor agreed to furnish, on its completion, an adequate endowment. This has been completely fulfilled. The institution will be in charge of a fixed staff residing on the grounds and under the general direction of the attending surgeon. Dr. H. L. Foss of the Mayo Clinic has been appointed to this office and on the completion of the hospital will assume charge.

On the 24th of September, the anniversary of the man to whom the institution stands as a fitting memorial, the official dedication will take place and shortly after the hospital will be opened to patients.

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**Coeducation at Charing Cross Hospital Medical School**

The falling off in numbers of medical students of the male sex and the increase of applicants for a medical training at the London School of Medicine for Women (Royal Free Hospital) have prompted the authorities of Charing Cross Hospital to allow coeducation—something that a few years ago would have been considered not only unsuitable but quite impracticable. The Hospital, in commenting on this new departure, suggests that the authorities consider the desirability of gradually replacing male medical students by women, and adds, "meanwhile the fees of new women students will be a welcome addition to the depleted exchequers of some of the London hospitals; for is it to be supposed that Charing Cross Hospital, although first in the field, will have a monopoly of the overflow from the Royal Free Hospital?"

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**American Hospital in Florence**

The American colony in Florence has secured from the Italian Red Cross the historic Villa del Sole di Camerata, for use as a hospital for convalescent private soldiers. The Italian Red Cross will furnish the medical staff and all expenses of equipment and maintenance will be met by the American committee.

Fig. 1. Spinning, weaving and rug making.

## OCCUPATION OF PATIENTS IN STATE HOSPITALS FOR INSANE[1]

### Benefits of Work and Diversion Heretofore Have Been Restricted to Willing Chronic Patients—Now All Patients Must Have These Advantages—Threefold Purpose: Therapeutic, Reactional and Economic

By HENRY P. FROST, M. D., Superintendent Boston State Hospital, Dorchester Center, Mass.

THE threefold function of occupation of patients—therapeutic, recreational and economic—gives the subject a position of prime importance in mental hospitals, especially the large state institutions treating and caring for all classes of the insane. These aspects of occupation have long been recognized and in varying measure have received attention, but until comparatively recent years effort has rarely gone beyond the economic utilization of the willing and more intelligent chronic patients and the diversion and treatment of convalescents. These are the obvious and easy avenues of use demanding the minimum of effort on the part of the hospital administration; and, while useful, are limited to a relatively small group of patients not very badly in need of the help.

From this sort of self-propelling activity to an organization extending the benefits of employment to the great mass of demented, untidy, destructive and violent chronic patients is a long step and a difficult one. The very existence of these troublesome classes of patients in the institutions is due in great part to the lack of occupation to which they have been condemned. Nowhere is it more true that idleness is the root of all evil. Certainly it breeds dementia and fosters the formation of untidy and destructive habits as well as bad temper and violence. A program of occupation which stimulates interest, replaces confusion with order and gloom with good cheer, contributes to the cure of many, and cuts down the cost of supervision and maintenance, is well worth the effort involved in its establishment.

The great value of occupation in the treatment of the insane lies in its infinite variety, its adaptability to innumerable individual tastes and capacities, its range from utmost simplicity to stimulating technical exaction, but above all in its essential normality, by reason of which it constitutes for these unfortunates the natural passageway back to normal life. Wandering attention is trained anew to concentration; distracting thoughts are pushed into the background; delusive concepts and hallucinations are crowded out of consciousness by demands of reality; depression and feeling of inefficiency respond to the en-

[1]This is the sixth in a series of papers on "The Government of State Hospitals for the Insane." Last month appeared "Organization of Domestic Departments"; next month will be published "Nurse Training in Mental Hospitals."

couragement of approbation; and self-respect is built up again by successive accomplishments which are tangible and which afford satisfaction as they do in states of health.

The recreational quality is inherent in anything that breaks monotony and gives new or keener interests. The sight of other people variously engaged excites a desire for corresponding activity in the mind of one who is perforce idle, whether as yet unaccustomed to idleness or surfeited with it. We often observe among our patients this suggestive force of example, and find it of great assistance in the propaganda. Sometimes, indeed, applications for employment have to be refused to patients not yet in condition to be benefited by it. The diversional feature needs, however, to be emphasized in order to obtain the best therapeutic results. This can be done in a variety of ways, according to individual temperament: for some the change to another kind of occupation introduces a sufficient new zest; for others the introduction of a social phase, such as group employment, with music and refreshments, or some form of competition, gives the work a flavor of play or a pleasing admixture of it.

The economic value of patients' employment is difficult to compute; it is certainly considerable. Their fancy work can be sold for at least enough to pay the cost of materials and instruction, and in our experience the same is true of the saving on products of the workrooms that are of use in the hospital, leaving as clear profit the large item of repair work done. The incomputable value is found in the diminution of loss from destructive tendencies associated with the aimless activity of these patients when unemployed, and the reduced cost of supervision and attendance resulting from the improvement in their habits as regards destructiveness, disorder and violence. A further very distinct benefit to the administration is to be noted in the better spirit which pervades the nursing staff when a regime of definite and interesting duties in connection with the industrial program replaces the drear routine of lolling and keeping an eye on a ward full of restless, unhappy, dull, and dirty dements.

Fig. 3. Making straw hats.

At the Boston State Hospital there has been for the past five years an earnest effort on the part of the management to realize as fully as possible the benefits of occupation to the patients and to the hospital.

The ends sought have been purely practical. They may be summed up as embracing (1) the substitution of purposeful and useful activities for the prevailing idleness of the able-bodied patients with its attendant train of degenerative and anti-social tendencies, and the promotion thereby of better mental and physical health, improvement in habits and conduct, more contentment and capacity for enjoyment, renewal of hope, and the furtherance of recoveries; and (2) making the economic result such as to justify in itself the effort and out-

Fig. 2. Broom making.

Fig. 4. Braiding straw.

lay, leaving the therapeutic and administrative benefits as clear gain.

In 1910, the beginning of the period under review, the number of patients in the hospital was 785. The percentage employed was 40, practically all in the domestic and outdoor routine. There was a small sewing room in which an average of 18 women were occupied, and three or four men made mattresses in a basement room. There were no ward occupations outside of housework and a little sewing and fancy work by a few women, largely on their own initiative.

At the present time, with 1,400 patients, the percentage employed is 60 and their occupations are classified as follows:

JANUARY 12, 1915

| | Males | Females | Total |
|---|---|---|---|
| Census | 614 | 789 | 1,403 |
| Employed | 408 | 433 | 841 |
| Percentage employed | 66 | 55 | 60 |

EMPLOYMENT

| | | | |
|---|---|---|---|
| Ward work | 234 | 205 | 439 |
| Handiwork in wards | 59 | 168 | 227 |
| Industrial rooms | 60 | 86 | 146 |
| In administrative departments, laundry, kitchens, etc. | 59 | 55 | 114 |
| With mechanics | 16 | 0 | 16 |
| Farm and grounds | 47 | 0 | 47 |

Without going into the details of measures taken to effect this fairly radical change in practice and a still more radical change in spirit on the part of both staff and patients, I may state that the work was begun independently in the men's and women's departments, in each of which was opened a small industrial room, since greatly expanded, under the charge of an inexperienced but willing and capable head. These potential instructors were sent for brief periods to institutions where occupation of patients was under way and also to industrial establishments to learn materials and methods. Work was begun with the better grade patients to insure success from the start, and they were given simple forms of occupation, after which the plan was to advance the capable workers to more complicated processes, filling their places with less promising beginners,

Fig. 5. Weaving rugs, bookbinding, and brass work.

who should be, so far as practicable, instructed by their forerunners.

The men at first made mattresses, brooms and door mats and caned chairs, later taking up basketry, brushmaking, weaving, upholstery, woodworking, and finally the manufacture of straw hats, besides doing a great variety of repair work. There remain to be added in this department tai-

loring and shoemaking, both of which are planned to be started this year.

In separate quarters and in classes in the wards during the winter, men unwilling to undertake or to stick to the utilitarian industries mentioned have been taught wood carving, leather and ornamental metal work, occupations serving the purpose of stimulating interest and keeping alive the habit of doing something definite each day. The capacity for work thus fostered through the winter months is given useful and still more beneficial direction when spring comes, by the substitution of outdoor employment in the garden or on the farm or lawns; and the same change is made in the case of many of the regular workers in the industrial rooms, which, to quite an extent, are used as a preparatory school in our scheme of industrial education, as well as a finishing course in convalescence, fitting patients for return to productive life outside the institution.

In the women's industrial room the occupations are sewing, mending, weaving, spinning, rug making, basketry, braiding straw and making hats, lace making, all kinds of fancy work, knitting, crocheting, tatting, making paper flowers, stenciling, working in water colors, and clay modeling. Taking into account the fact that some such work as the above is a part of the home life of practically every normal woman, we use the industrial room in their case more to get something started than as regular working headquarters. Patients are there given a chance to show their individual interest and capacity, or are given aid and instruction to develop these qualities and then encouraged to spend a part of their time in useful or agreeable occupation in their rooms or in the wards, thus giving to these quarters and to their life in them more semblance of home. Men, on the other hand, not being accustomed to such home occupations, and finding their interest chiefly in varieties of work requiring tools and making litter and noise, cannot so well be left to follow their employments singly or in groups in the wards, though this is done with them to quite an extent, too, several wards having frames for hooked rug making, or light looms for carpet weaving; in others there is group employment in such simple work as raveling old stocking tops for use in the weaving room, braiding straw for the hat industry, and picking hair for mattresses.

The organization for occupation comprises two divisions—one for men and one for women—each of which is headed by an instructor who has one assistant. The instructors have charge of the industrial rooms, where they direct the patients and also train attendants and nurses to act as assistant instructors in the wards. The practical experience thus acquired by the nursing staff is supplemented by lectures and demonstrations given as a part of the training school course. The head nurse in each ward is responsible for the maintenance and further development of suitable occupations among her patients, and she has the assistance of the instructor, who at stated times visits each ward to inspect and direct the work and in certain wards to give class instruction. This is the program for the women. With the men it has not been practicable to follow exactly this plan because the industrial room demands all of the instructor's time and the ward occupations of the men do not require so much expert supervision.

After some success had been obtained in developing the interest and cooperation of the nursing staff and the more intelligent and willing patients, special attention was given to the occupation and training of the least intelligent class and to the introduction of safe and suitable occupations in the ward treatment of those with violent and dangerous tendencies, for it was felt that these were the larger and more important fields for really effective work. For this latter class the straw hat industry, now well established, has proved most satisfactory. The work of braiding the straw is simple, interesting, clean, and no tools are required. Hair picking, raveling, to some extent rug making, and, for the women, sewing, are other employments suitable for these wards, which have as one of their benefits to the patients engaged the not infrequent improvement in conduct sufficient to allow of their transfer to the regular work rooms and participation in other industries.

The simpler ward occupations mentioned are of particular value in dealing with demented patients who cannot go to the work rooms, but, when weather conditions permit, their use for this class is almost entirely supplanted by outdoor work. Our best industrial exhibit is the series of wards empty of these patients, who are to be found in large parties on the grounds engaged in the simple tasks of digging, wheeling earth, gathering and breaking stones, etc.—developing one by one into really capable workers suitable for the more responsible tasks of farm or garden, and earning transfer to higher grade wards with pleasanter companionship.

The training of these patients to usefulness and their own betterment is work that demands intelligence and whole-hearted interest on the part of the employees entrusted with their direction. It cannot be done successfully unless the attendants are carefully selected, properly instructed in the principles to be used and the objects aimed for,

and stimulated by constant suggestion and discussion, and, above all, approbation of results attained. Success is won when the employee is made to realize the dignity and value of his work as an agent in the patients' treatment and learns that his results are not measured by the volume of their work product alone.

In like measure, though in less formal fashion, all heads of departments—the chef, the laundryman, the mechanic, the engineer, the farmer—and their assistants, become efficient industrial instructors and incidentally valued agents for treatment, since all have patients assigned to work with them, and, even if prompted originally by no higher motive than self-interest in the development of capable assistants, they deal out to their charges the helpful stimulus of cordial companionship and a common purpose.

## THE DOCTOR'S PART IN MAKING THE SMALL HOSPITAL SUCCESSFUL

### By High Order of Medical Service He Can Popularize His Institution—In His Relations to the Administrative Forces He Can Exercise Strong Influence

By DR. CHARLES H. COOK, Natick, Mass.
PRESIDENT OF THE FEDERATION OF STATE MEDICAL BOARDS OF THE UNITED STATES

IT is assumed that the doctor has either accepted an invitation from the trustees to assist in the charity work of the hospital by serving on the staff, taking his turn in the ward service, and, as is customary in most hospitals, giving his services to ward patients, with the right to send his private patients to the hospital and personally care for them, or has accepted an election to some other position which allows him to send private patients there and care for them himself.

The acceptance of such an invitation or election is, in itself, a tacit agreement to conform to the rules and regulations of the hospital, even though the rules may not be in every way just and equitable. So long as he continues in either of the relations above named, that obligation holds. The principle here involved holds true universally, no matter with what organization one becomes voluntarily allied, be it a private school, a college, a secret society, a benevolent association, or a church—whoever voluntarily joins an organization, by that free-will act tacitly agrees to conform to its rules and regulations; failure to accept and abide by this self-evident principle is at times the underlying cause of friction and trouble.

Having become connected with a hospital, the doctor thenceforth holds a manifold relation to (1) the ward service, (2) his own private patients and to the private patients of the other hospital physicians, (3) the other hospital physicians, (4) the hospital nurses, (5) the every-day hospital routine, (6) the hospital authorities, (7) the public.

1. Ward Service.—Ward patients in most hospitals have no choice as to their medical attendant. The physician may be one whom they would not choose in private. However that may be, they have no alternative. Thus an added responsibility is put on the attending physician, that he lay himself open to no deserved charge of neglect. The word "deserved" is used advisedly, for often the ward patient receiving free medical treatment will "look a gift horse in the mouth" and complain even of some fancied neglect. An honorable and conscientious physician will, therefore, be very faithful in his ward attendance—even more so, perhaps, than in caring for his private patients—because in the latter case he is the patient's choice, and that fact alone attests confidence in him. Failure to observe this precaution, soon or late, redounds to the hospital's discredit and arouses criticism when commendation would otherwise follow. The physician must show that the welfare of the patients stands uppermost in mind by calling, in cases of serious illness, other medical men in consultation. He thus avoids taking undue responsibility, and will not be open to criticism, neither will the hospital, should the case result unfavorably. The confidence thus inspired that ward patients will be properly cared for adds greatly to the good name of the hospital.

2. Private Patients.—These include his own private patients and those of other physicians. It may be taken for granted that the doctor will take as much interest in his own hospital patients as he would were they at home. But he must needs have especial care as relates to the private hospital patients of other physicians. People in the smaller towns and cities are more or less prone to assume that every hospital doctor knows all about every hospital patient, and questions are asked, expecting or seeking information that would not be sought were the same patients at home. By helping to cultivate the understanding that patients in hospitals have the same right to privacy concerning themselves that would surround them at home, each physician can help to develop the feeling that patients are protected and

their rights respected, and thus others are willing, when sick, to go to hospitals who otherwise would refuse. The late Austin Flint, of revered memory to all who were privileged to come in contact with him, in his book, "Clinical Medicine," says:

"The examination of patients, either in private or hospital practice, should not be made in the presence of disinterested spectators. A full investigation involves points of inquiry which are among the confidential communications from the patient to his physician. . . . The physician has no right to make known the diseases of his patients without their consent."

Would that the laity had a working appreciation of this truth. Both in ward service and also in private hospital cases, physicians should religiously avoid any criticism, either by word or by look, of the past, present, or future treatment of other hospital patients. Failure to observe this really obvious obligation may result in keeping other patients away, and justly.

The doctor doing ward service ought to be very careful to send patients, when discharged, back to the physician who recommended their admission, else he is justly open to the charge of using his opportunities to get away the patients of other doctors, something in every way to be condemned.

No physician connected with a hospital ought to ask for or expect favors and privileges that cannot properly be granted to every other physician similarly situated. He should not ask for a suspension or departure from the established hospital rules "for me." Trouble will necessarily follow a departure from this rule. "Equal rights, equal privileges," is the only workable motto.

3. Relations to Other Hospital Physicians.—If every physician be always and everywhere a gentleman, if he observe the golden rule, if he recognize the absolute necessity of doing good "team work," and observe the every-day professional courtesies, much otherwise unfortunate friction in hospital administration will be avoided. To add to this statement would seem to be a work of supererogation.

4. Relation to the Hospital Nurses.—It is greatly to be regretted that so often, judging by treatment given nurses, they are thought by becoming nurses to undergo a physical change; that they are metamorphosed, as it were, into beings made of Bessemer steel, and can endure unkind words, criticism, overwork, loss of sleep, no hours off duty, etc. Too often hospital physicians treat nurses as inferior beings. The nurses are expected to show by their demeanor that they recognize and acknowledge their inferiority. Kind words, thoughtful consideration, shown by acts and words of appreciation on the part of physicians, will produce a bountiful harvest of self-abnegation, secure attention to details otherwise neglected, and lighten and cheer the every-day life of the student nurse, who is often between the sometimes exacting doctor and the suffering and often intolerant patient, but must endure in silence whatever is said to her, no matter how unreasonable and unjust. Let the physician but imagine for one little moment that the nurse is either his sister or his daughter, and he will see the situation from a different viewpoint. Nowhere will kind words and kind treatment bear a more abundant harvest than in the appreciative and considerate trained nurses. Were the doctor influenced wholly by mercenary motives—which he ought not to be—kind treatment would pay in the enhanced good name he would get outside, for often his hospital words and actions get to the outer world in unexpected ways.

5. Relation to the Hospital Routine Work.—Every hospital has a certain amount of daily work which must be done. Sudden and unexpected interruptions break into and confuse the daily routine. The doctor, especially in his surgical cases, can either help or hinder, according as he is either thoughtful or inconsiderate. Emergencies cannot be avoided, and must receive attention whenever they arise. Certain days for admission of cases not acute, and specified days and hours for operations not immediately imperative, would help to make the hospital machinery run with less friction. To get notice that an operation will "come off" in an hour or so when it has not been planned for, and the duties already demanding attention would fill the time to seemingly its full capacity, adds a burden that is seldom realized save by those on whose shoulders it comes. When the operation is to be done by a surgeon from a city more or less distant, his convenience and duties elsewhere must be considered, but even then thoughtfulness for the hospital can often make the interruption less acute.

Making professional visits at unseasonable hours is especially upsetting to good order, as well as very disturbing, not only to the patients of the physician himself, but also to the patients of other physicians, whose rights to quiet in seasonable hours ought to be respected.

Avoiding wastefulness in surgical dressings, especially in removing and replacing them, will greatly lessen the yearly expense account. Lack of consideration in the use of sterile towels, gloves, gowns, etc., always creates an unnecessary expense.

There is a possibility that hospital physicians sometimes forget that people generally are not accustomed to hospital life, and that to be taken from home, admitted to a hospital, rushed, as it were, to the operating room, etherized and oper-

ated on without delay, are more momentous matters to the patients than to the physicians. Could the patients be admitted one or more days beforehand and become "acclimated" to the new surroundings and new life, it is quite possible that patients would often make a more speedy and satisfactory recovery, would be more contented, and leave with words of praise rather than of criticism. "Put yourself in his place" would be a good working motto for physicians.

6. Relations to the Hospital Authorities.—The doctor needs ever to realize that the hospital is under the authority and control of the board of trustees, and that the trustees cannot delegate their authority to anyone else, either physicians or visiting committees. The trustees may, and should, solicit suggestions and recommendations from others, but the final decision in any matter, and the resulting consequences therefrom, rest with the trustees alone. Failure to recognize and observe this fact has been the cause of many heartburnings, especially on the part of superintendents, who are the agents of the trustees, and always represent them in any matter, and whose lot, at best, is sufficiently burdensome, even when free from trials arising as above.

7. Relation to the Public.—One great difference between the large hospital and the small hospital is the community interest in the latter. Here is a great opportunity for every physician connected with it to help or to hinder its success. They can help to educate the people not to expect something for nothing, even in a hospital, when they are able to pay for care and treatment. There are those in every community who would scorn to be "dependents," but who are willing, if possible, to pauperize themselves by going on the free list as patients, believing that their names will not be published. Instances have been known where such publication resulted in payment of hospital bills, so that the names could be removed from the free list. Let the people be educated against accepting hospital charity unless worthy of it. To do otherwise is to help use up the funds of an oftentime struggling hospital, lessen its ability to care for the really deserving, at times compelling it to refuse worthy applicants for free treatment. Here is a field which the doctor easily neglects sometimes because his field of vision is limited to his individual patients, and he fails to take the wider, broader outlook. Hospitals were formerly the opprobrium of the poor—now they are the boon to the well-to-do. They had their origin in the philanthropic spirit of people able to provide shelter and care for the needy sick. Physicians said, in substance, "we will assist in the professional care of these sick ones by giving our services"—charity all around. But, since the advent of trained nurses, people go to hospitals, especially in surgical cases, because they can get better care. Many of them wish to pay for professional treatment, but in some hospitals, because of the rules made before the advent of the pay patient, they cannot do so. These unjust rules are at times taken advantage of by persons of means, and they thus virtually steal their treatment, be it either medical or surgical. Let the physicians assist in righting this wrong, and the result will be increased benefit to many hospitals and also to the medical profession. Too much charity work is now being done by physicians. Emerson defines justice as "the fairest thing all around." No one can defend such rules as the "fairest thing all around." The medical profession has ever responded cheerfully and heartily to the call of the sick and suffering to an extent far surpassing that of any other calling. It is quite largely through ignorance on the part of the public that the present condition exists. It is often supposed that hospital physicians are paid by somebody, no effort being made to get at the facts—that being thought of no consequence, so long as *they* get free treatment.

The doctor may help to make a small hospital successful by joining hands with the trustees, superintendent, and nurses, who, if true to their mission, are animated by the same self-sacrificing spirit; by seeing in every patient, even the most depraved and seemingly hopeless, the divine form "made in His image," though he may, at times seem to himself to be ministering to merely sick, suffering, perhaps abandoned, folk. When called on to "mutilate God's image," he may come to "wear the glove of velvet, though it may cover the hand of steel;" when fighting what he fully realizes to be a losing fight, he has the great privilege of making easier the last hours of some poor, needy person who otherwise would languish in pain and suffering. Thus he may help to make the small hospital in his community to be, in its truest, highest, most sacred meaning, a "Hotel Dieu."

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**New York University Offers Two-Year Course Leading to New Degree—Doctor of Health**

The list of lecturers in this course at New York University includes Dr. Haven Emerson, deputy commissioner of health; Dr. S. Josephine Baker, director of child hygiene; Dr. John S. Billings, director of the Bureau of Infectious Diseases; and Dr. O'Connel, of the Quarantine Station.

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They tell this story on an Irishman who helped pick up a wounded man after a battle. "Poor fellow, one of his wounds is fatal, I believe," remarked the surgeon. "So it is," said Pat, "but the other wan ain't, so he has an aiven chanct."—*Sedgwick Pantigraph.*

## HAVERFORD COLLEGE INFIRMARY AND DISPENSARY

### A Plain, Simple Piece of Architecture Built for Business and not Ornament—Contains All the Essentials of Good Hospital Service

By BAILY & BASSETT, Architects, Philadelphia

THROUGH the beneficence of Mr. John T. Morris and his personal interest in the plan, a most complete and well-equipped infirmary and dispensary building has been donated by him to Haverford College, Pennsylvania, and has proved a most efficient and valuable adjunct to the institution. Every effort has been made so to construct the building that it shall be fireproof, sanitary, comfortable, easy to keep clean and to maintain.

The walls are stone, the floors and ceilings are iron and concrete, and the finished floors composition, "sanitas," except in the wards, where they have maple centers. The walls are hard plaster, and every horizontal and vertical corner of floors, walls, and ceilings is rounded 1¼-inch radius. Door frames are plain steel, set flush with plaster, without molding, and every frame, door, sill, and window muntin is rounded to avoid places for dust to collect. The doors are solid, without panels, and have rounded edges and corners.

The lighting fixtures and special hardware are all plain, with rounded forms, all porcelain or white enamel finish. Special reading lamps, with shields, are supplied for patients who wish to read without disturbing those who may be sleeping.

There are no washboards or ledges to catch dust, and all the doors, sashes, plaster walls, and iron frames are painted with standard dull gloss "satinette."

A combination direct and indirect vacuum system of heating is used, supplied from the central plant, with thermostatic control, fresh air being

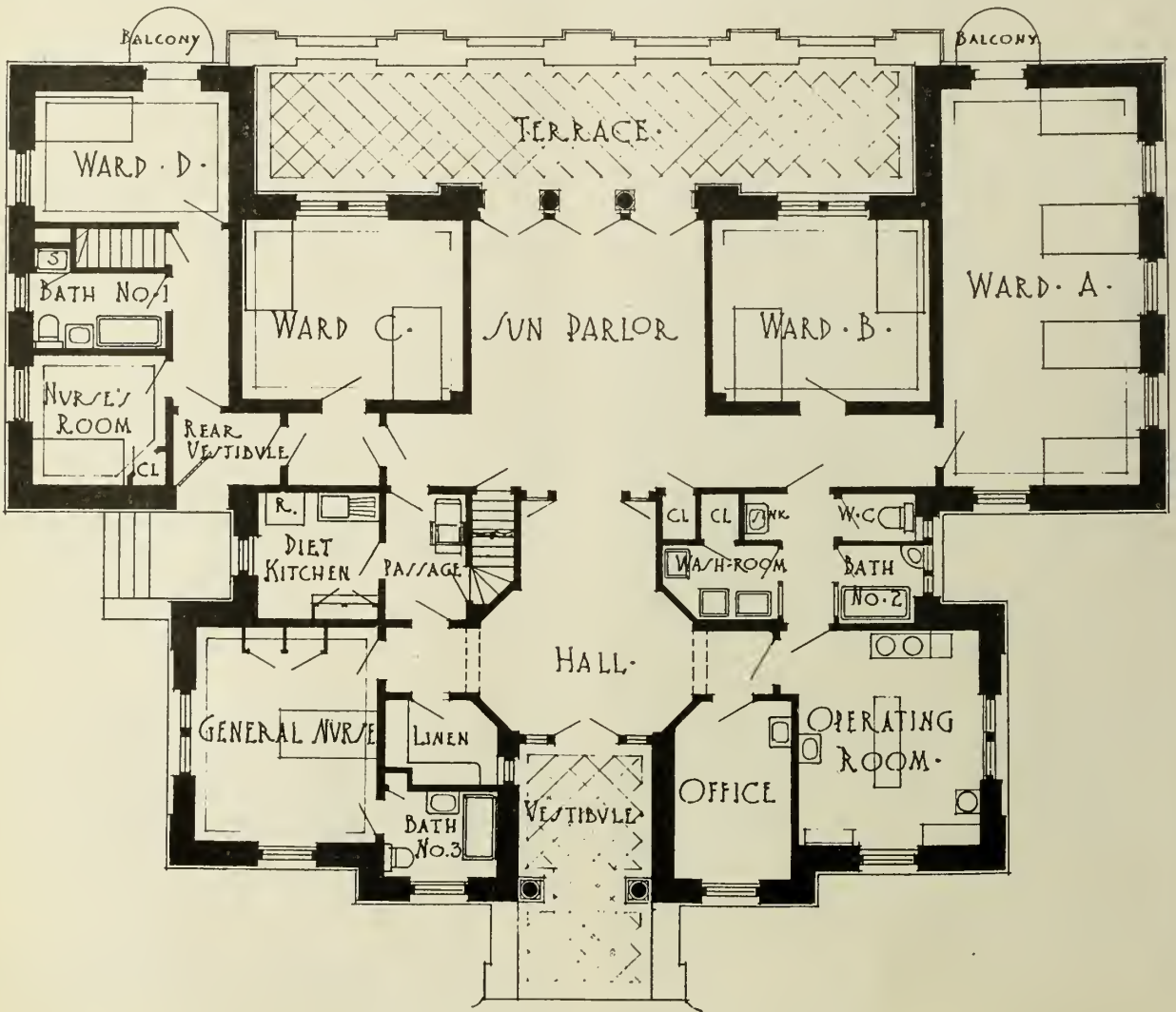


Fig. 1. Haverford College Infirmary and Dispensary. Floor plan.

drawn through the rooms by large steam coils in the stacks at the ends of the building, the bath rooms and sinks being ventilated through an independent duct. The direct radiators furnish auxiliary heat at a comparatively low temperature.

The preference of the sunny side of the building has been given to the wards, the sun parlor,

Fig. 2. Haverford College Infirmary and Dispensary. Southeast view.

and the terrace, the effect of the latter being like a southern clime to the convalescent when the cold is bitter on the northern side of the building. The sun parlor, with its glass doors, which are opened wide in mild weather, has proved to be most comfortable and practicable. The office and the nurses' rooms are near the entrance, and the

Fig. 3. Haverford College Infirmary and Dispensary. The operating room.

latter have a private bath room; the linen room and diet kitchen are located near here.

The operating room, though convenient, is isolated by two doors from the wards, and adjoins the doctors' office and the wash and toilet rooms. The doors are all wide enough to allow the wheeled operating couch to pass through easily. The room is lighted by large windows on two sides and by a skylight in the ceiling, where a swinging electric lighted canopy takes its place for night operations. The room is fully equipped with sterilizers, x-ray apparatus, basins, instrument cases, etc. The wash room has separate sinks for disinfection of clothes, washing, etc., and is separately ventilated.

The contagion ward, D, is practically an isolated building, with an independent outside entrance. This entrance vestibule has only an iron grille and no solid door, thus leaving the passage in this ward open to the outside for thorough ventilation, the entrance platform being protected from the weather by a glass hood above. Two pairs of double doors cut this ward off from the main building. It also has its individual nurse's room, bath room, hopper with ventilation through special flue, diet kitchen and laundry for washing and disinfecting clothes on ground floor below. In case of additional contagious patients, ward C

Fig. 4. Haverford College Infirmary and Dispensary. A small ward.

can be used, closing the double doors, which have a special key and can be operated only by the college authorities, so as to insure perfect isolation from the main building when contagion exists.

Outside balconies are provided on the same level as the floor, so that patients can be pushed out on wheel chairs for fresh-air treatment.

The loft is used only for the steam coils and ventilating ducts, and the main basement for the heating apparatus and supplies. A stone wall in the basement completely separates the laundry and diet kitchen of the contagion ward.

As the building is on sloping ground, the basement floor is just above the sod on the south side of the building, which renders the sun porch at least 9 feet above the ground, affording it protection, privacy, and a fine outlook over the lawn, tennis courts, and athletic field.

# NERVOUS AND MENTAL DISEASES IN THE CURRICULUM[1]

## Proper Conduct of Life and Service Depend on Study of Mental Processes Through Modern Psychology—Suggested Approaches to the Study

By FRANK P. NORBURY, A. M., M. D., President and Medical Director Maplewood Sanatorium, Jacksonville, Ill.; Formerly Alienist Illinois State Board of Administration; Formerly Superintendent Kankakee State Hospital

THE ultimate object of a curriculum in any educational institution is to provide best for the educational needs and guidance of the student, by defining the course of study and elaborating appropriately the procedure.

It is an error, however, to believe that the content of the curriculum is the only important consideration, for the most aptly selected and most skilfully elaborated course of study does not automatically produce trained minds. The essential feature is good teaching; poor teaching will spoil the most thoughtfully constructed curriculum. The purposes of the curricula in our training schools for nurses are no more, no less, different in educational aims and purposes than those of all educational procedures, which, as we know, are, even in animals, for the purpose of adaptation to environment. Man's endeavor in adaptation is profoundly altered with the growth of his environment as he finds it in human society; but, somehow, we forget this fact in our educational propaganda, and therefore we take the liberty of reiterating, *adaptation*. Learning in man, whether it be a new adaptation to a changed situation or the acceptance of an intellectual truth or moral principle, depends much upon the content of the individual mind, and this assumes infinitely greater importance when environmental needs become more and more complicated.

The history of professional education in medicine and in nursing, as in all constructive work, shows the growth of knowledge, culture, and higher intellectual needs in this purpose of adaptation to social cultural necessities.

The teachers' work, then, is highly constructive, and the purpose of education is not only to fit each generation for adaptation to the grade which society may happen to hold at the time, but to create in men the habit of discriminating and of choosing that which leads to something higher. We are told that education is always in danger of arrest from compression by immediate or practical aims. According to Mary Ard MacKenzie, R. N., of Ottawa, Canada, this is the fault of the educative situation in the modern training school for nurses. This is doubtless true, because the evolution of the training school is but the recapitulation in experience of educational progress.

Medicine had the same tribulations, and, until the advent of the supervision of medical education by the American Medical Association and the Carnegie Foundation, there was no definite plan of standardization of curricula, or real recognition of cultural values, commensurate with the adaptive needs of the times. The old methods of medical instruction did fairly well for the conditions of early times in our civilization, but when the necessary adaptations to meet adequately the demands of a growing order, and the whole social plexus, must be considered, new interpretations were incumbent.

The result has been an accelerated adjustment to the information of today; medicine means more to us; we are in a receptive mental attitude and friendly to variations which contribute to progress. Now, as I see the situation in the training school for nurses, there is the need for readjustment to the demands of the times. Training schools have not fully defined their objects nor elaborated appropriately their curricula to give full educational and cultural values. Somehow, the impression prevails today as in the days of old in the medical training, that if we give the individual information enough, he or she will, sometime or somehow, learn in daily experience to apply it to the problems at hand. Just here is where readjustment is necessary—where adaptation must be considered ere we defeat the very purposes for which our schools are designed. This is the conflict: pupil nurses, like medical students, are not flexible; they cannot adjust themselves by simply acquiring knowledge. Fitting for adjustment, for adaptation, should be the part of the educative and cultural end of training. Education should rank, as Swift says, "to develop mental plasticity, a capacity for understanding and getting control of new situations and for making them."

I am not here in a spirit of censure, nor to urge any particular propaganda, but rather in a missionary spirit, urging you to consider more fully psychological motives, that we may get away from the danger of compression from immediate practical aims—the alien animal methods—and substitute the highest goal, that of preparation to select the largest environment which educational needs can supply.

[1]Paper read before the Illinois League of Nursing Education, Springfield, Ill.

Our schools frequently are institutions of learning, but not of education for adaptation.

There is a difference between schooling and education. Education means adjustment to enable the individual to realize all of his native powers to their full value. This promotes progress by removing artificial restrictions or individual variation. Today the social needs cry for "dynamic educational life" and not for "static animal methods" of the past. This will mean a reorganization of our ways and means and a larger view of life—a social awakening, and a greater conception of what experience is and what we may profit by it.

The training school must consider more particularly the ultimate object of all curricula, viz.: the training of the peculiar aptitudes of the pupil nurse, by sifting, selecting and preserving these aptitudes for the service in hand. This means doing away with the inelastic and unsympathetic methods of teaching which are destructive to individualism.

Mary Ard MacKenzie, R. N., says she "could name dozens of bright, promising women whom she has seen, filled with the missionary spirit, eager to do something to help someone to be better, happier and healthier, who have entered on a training in various so-called training schools, and have issued from these institutions warped, narrow, mercenary, with all their ideals gone, and in almost every case gone beyond recall."

This is true according to my own observation and I am glad to have it confirmed by one of larger experience than myself. I believe the fault is in the curriculum, which so frequently is chaotic, undefined, weak and inefficient in educational values. Perhaps I am too much of an idealist and too rampant on individualism. I may be a reformer crying for greater latitude for variation without destruction—that we may, true to the law of survival of the fittest, be appreciative of a larger, more universal educational privilege which will enable us to foster, maintain and profit by experiences which contribute their worth to the supreme object of the professional nurse—viz.: service. Let the training schools awaken to their opportunity by readjustment of their curricula before they are forced by social circumstances to do so. Swift says: "It has always been the tendency of educationalists, like politicians, to resist reform until revolt has forced it upon them, and then, in yielding to the inevitable, to adopt the nearest apparent relief." Let it not be said of our training schools that the adoption of new educational ways and means is to come simply as the nearest way out for apparent relief, or a compromise with the inevitable demands of educational readjustment. No! let it come as a constructive measure; a new adaptation; a new estimate of the needs of the pupil nurse by drawing into the problems her rich personality, that she may know life as it is, and constructively interpret ideas and situations and apply this knowledge in a true professional way. This means a study of the individual pupil and an adjustment of the pupil to the adaptive ends.

The whole curriculum of training schools will have to be readjusted to educate the students as individuals and to make the school course one of real educational value.

To meet this end, there necessarily must be more consideration given to preliminary training, to the selection of pupils who will be prompted to enter with the true spirit of service and with belief in the educational opportunity which such a career offers. The late Dr. James G. Mumford, in his versatile handling of the problems of the practice of medicine, presented in his charming little book, "The Doctor's Table Talk," some of these acute and vital problems which confront us today. In reply to the criticisms of the trained nurse he says, "they are criticized more unfairly than any other people in the world except servants and doctors." This is true, but like the servant and the doctor, many of these criticisms are of their own making and due to the want of knowledge, experience, or the kindlier motives which should prompt one in serving his fellow man. Much of the criticism I believe could be overcome, dispelled and suppressed if pupil nurses could study human conduct in its realities as we find it among the nervous and mental cases, and seeing, hearing, absorbing and interpreting such experience, deduce their "noble career" through the serious philosophical views of life which such an experience must give them.

I say this advisedly, and will add that the subject of nervous and mental diseases in the curriculum of a training school in the general hospital will have real educational value, providing, of course, it is not to hold a perfunctory, superficial place in this curriculum. The tendency of the times is toward a more comprehensive study of human conduct. Psychology is the study of human conduct, and it is evident that the students of medicine and of nursing, dealing as they do with human personalities, must become familiar with the science of psychology that they may apply it in the practice of their professions. Psychology has taken the central place in the thought of our time, says Munsterberg; "it began with an analysis of simple ideas and feelings, and it has developed to an insight into the mechanism of the highest acts and emotions, thoughts and creations. It started by studying the mental life of

the individual and it has rushed forward to the psychical organization of society, to social psychology, to the psychology of art and of science, religion, language, history and law. It started in the narrow life of philosophers and is now at home wherever mental life is touched."

The new creed would impress upon us the need of studying personalities, beginning with our own. Personality is a content—the central content—of our consciousness, and psychology teaches how consciousness grows and influences the development of mental life. We thus learn how personality crystallizes about sensory, motor, and all sensations which come to the body and radiate from it in the form of reactions known as conduct or behavior. The growth and development of our personalities is dependent upon the manner and form (our adaptation) in which we "appropriate from our environment—from everything which works in the world under our control—in the interest of our influence, just as our body works, including thus our name, our clothing, our place in society, our work, our property, our citizenship." Our personality is not a matter of chance formation. It does not depend on chance knowledge and chance sensations. It remains, when once formed, and is the central group of psychical contents which accompany the transformation of experiences into action; that is, thinking, feeling and doing.

"Psychology deals with the whole scale of personalities as found in us: the psychological one; the sociological one; the ideal one; but each one is and can be only a group of practical contents—adjustments, a bundle of sensational elements."

The idea of personality, then, is associative, and the unity and continuity of personality means the casual connection of its parts by which anything that has once entered our psychical life may be at any time reproduced and may help to change the associative effects which come from the idea of ourselves. Thinking, feeling and doing under normal conditions should produce an agreeable mental state in ourselves. We think logically because the result is useful for us; that is, it secures the desirable practical ends. We act morally because we wish to give others that happiness which we desire for ourselves.

The production of the psychological states of delight and enjoyment in us and others and the reduction of the opposite mental states of pain and sorrow are the only aim and goal of a full, sound life. Were all the disagreeable feelings in human consciousness replaced by happy feelings, one psychological content thus being replaced by another, "heaven would be on earth." Happiness is the goal of every personality even when one takes his own life. Students in medicine and nursing approach the problems of self and of all psychological phenomena with the prejudice of almost all laymen. Directors of training schools in general hospitals, like their fellows in the practice of nursing, and physicians in general, are seemingly confused at the so-called complexity of nervous and mental disorders: they are strange, uncanny and without the range of ordinary experience. Now, if they would stop, think, look and listen, they would find that nervous and mental disorders not only enter into contact with all fundamental sciences of medicine and biology in general, but also invade the social and moral sciences. As a result these problems require data from nurse and physician alike, and nurse and physician should be prepared to supply it.

Rarely, indeed, do I find even a director of a training school or the attending physician prepared to supply those data. Why? Because they have received no training and have not correlated their experience in a usable way nor even tried to interpret what they saw. I am sure that this great, growing need must be met; and it is high time that training schools were recognizing this need.

Again, this need is being shown and met in the wonderful advancement being made in social service, which has now become a necessary adjunct to hospital service.

The good which our hospitals are doing is greater every year and the dread of hospitals is lessening every year. In spite of the impersonal organization of hospital service, there is an awakened interest in the individual patient; this is the American idea. We owe to Dr. Richard Cabot, in his appreciation of man as an individual, the development of the social service idea.

His belief is in social service as well as in clinical studies, "to concentrate upon the individual. Don't bind up your patients in inflexible groups; learn their stories; follow them to their homes; stimulate and inspire them." This is the present teaching; it is due to the awakening which psychology has given us, and the individual is the unit of service. Social service has now a course in the curriculum of the medical department of the Indiana State University. Dr. Emerson has interested his senior students in active participation in this work. There is no doubt that the time has come when there should be, in the curriculum of our training schools for nurses, a place for nervous and mental disorders. It should be a reasonable method, dealing with the peculiarities of thought and conduct and the rules governing these mechanisms, especially the physiology of the associative mechanisms of the brain (which is

really psychology), which is the consideration of nervous activities as means of adaptation.

Jung formulates these psychological needs as follows:

It means an understanding of the laws governing the selection of reactions, thus laying the foundation for a study of the conscious feelings, called moods, affects, attentive intervals, etc., on the one hand; and the bodily conditions on the other. The adoption of such a method will give a clue to the rational understanding of disorders wherever found. The persons described as insane, hysteric, psychasthenic, the patient disturbed with so-called nervous dyspepsia, etc., have all adopted a certain attitude toward the situation in which they are placed.

This may be described as unusual or abnormal, but not necessarily as diseased. The conduct, behavior, the delusions, and the sense falsifications thus cease to be symptoms of any special disease process, but take their true position as part of a particular mode of meeting some situation of adaptation. This is the situation as it appears to the patient, and not necessarily as the onlooker perceives it.

The factors which must be considered in teaching concern not only the condition of the nervous system, but also that of the whole body. The selection of the reaction of any given situation depends, in the first place, on the adequate functioning of the various sense organs in the collection of information concerning the facts to be faced. It becomes necessary to study all of these associative mechanisms or modes of meeting situations with which the individual is confronted. The study of these situations and reactions should be followed and interpreted so that the student is thus able to group the fundamentals of mechanisms—what adjustments mean; what adaptation really is—and thus learn to know not only herself, but her patients. Applied knowledge of this kind is by no means for the patient alone. It should be applied first to the nurse or physician who is to deal with patients. It is a moral and professional duty for the physician and nurse to study themselves in order to clear their minds from their own unconscious interferences. The unconscious, as Jung says, is unknown, even to the most frank and honest person.

It is only by psycho-analytic processes that the physician and nurse will remove the blindfolds which stand in the way of their usefulness. The complexes of human beings build character, define personality and determine conduct. It may mean a readjustment, a re-education of personality, for nurses or physicians to adapt themselves properly to the calling which they have chosen. No nurse or physician should forget that to be of service in practice, the chief requirement is personal freedom—moral independence. The study of nervous and mental diseases, from the standpoint of modern psychology will give this. Wonderful advancements have been made in this field during the past decade, and the modern, well-trained nurse and physician must have at least fundamental knowledge of these principles.

I beg leave to summarize my suggestions in a provisional curriculum suitable for training schools in our general hospitals:

1. A study of the anatomy and physiology of the nervous system.
2. A study of psychology in its applied forms—associative reactions, etc.
3. A study of the individual. As Cabot says, "concentrate upon the individual."
4. Clinical studies and observations of cases in the wards or dispensary.
5. A development of interest (depending on disposal of time and individual capacity of pupil nurses) in social service and all that it means, in the problems of life, in mind and conduct.

Perhaps you think I have a formidable task laid out for the pupils, for the directors and for the attending staff in general hospitals when I suggest the many-sided activities necessary to a full comprehension of nervous and mental disorders. I do not think so; it means adaptation to the work in hand which the modern physician and nurse must understand.

Dr. Crile, in working out his surgical problems, found himself in the realms of the psychologist. His "kinetic theory" should be known and understood by every nurse, if she is to interpret what she sees. The nurse and physician are justified in excursions into other realms of knowledge, especially those dealing with human conduct.

I am not seeking to make alienists, but students of human conduct, better personalities, that better service may be given the individual patient.

It is said that an alienist studies everything but psychiatry and analyzes everything but the patient. Let me say that while an alienist is not without honor save in the wards of a general hospital, he necessarily is bound to leave his own field and solve for himself his own special problems in the sciences.

In this way and this way only can he do justice to his work, his field of service and the promotion of the science of medicine.

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With a view of possible needs in caring for wounded men the Navy Department at Washington is collecting data regarding the capacities of public and semi-public hospitals in various parts of the country.

## OLD BUILDING RECONSTRUCTED INTO AN EXCELLENT CHILDREN'S HOSPITAL

### The A. Jacobi Department for Children of the German Hospital, New York, Contains All Essentials for Modern Scientific Care of an Exacting Class of Patients—Block Type and Cubicle Divisions

By A. L. GOODMAN, M. D., Visiting Physician

THE A. Jacobi Department for Children of the German Hospital is situated on the southwest corner of 77th Street and Lexington Avenue, New York City. It was formerly the hospital for the private patients of the German Hospital; this fact I mention because we had to take into consideration the fact that we were dealing with the remodeling of the shell of an old building and could not incorporate some of the ideas which we should have done had we been building an entirely new structure.

To describe in detail the construction of the building will, I am sure, give but a poor impression of the appearance of the hospital. It must be seen to be appreciated, for I believe that it is about as perfect an institution for the care and treatment of infants and children as exists here or abroad.

The building is oblong in shape with its axis pointing east and west, separated in its entire length by a long corridor with the rooms on both sides.

The basement belongs to the administrative uses of the institution and consists, as you will notice on the plan, of a kitchen, scullery, stores, anteroom, dining room for the chef and his assistants, and bedrooms for their use.

Fig. 1. The A. Jacobi Department for Children, German Hospital and Dispensary, New York.

Before discussing the medical features of the building I would like to state that in constructing an institution for the care of children, we must bear in mind that it is our duty not only to treat the children placed under our care, but to protect them from infection within the hospital itself. With this end in view we have adopted a modified unit system throughout the institution and have established, on the first floor, in conjunction with the administration rooms, a quarantine division.

From the plan of the first floor, you will see that the entrance to the building is on the side street. On entering the institution, to the right is the administration office and across the hall the waiting room; next, the doctors' room and the examination room for the admission of patients; then the nurses' room and pantry. The communication to this, the administrative section of the building, is separated from the quarantine and admission wards of the hospital by a glass door, so as to shut it off entirely from the outside passage and from inquisitive strangers. The quarantine division is again separated, as you will notice on the plan, by another glass door which divides it into two units, consisting each of three separate rooms and bath; these rooms, as well as all other units in the building, are separated by plate glass partitions which enable the nurse in charge to have full view of the various units, which would be impossible had the walls been made of opaque material. This not only makes it easier for the nursing staff, but I believe it to be of great benefit to the children to see one another from one room to the next, without the possibility of contagion to which they would be exposed in a larger ward. The next three rooms of this quarantine division are used for the general admission of patients. If any case is observed that gives the impression of a

possible infectious disease in its incipiency, it is at once removed to the other unit in the quarantine division, and kept there for further observation completely isolated from the general admitting unit. Should any infectious disease develop it is at once transferred to the regular institution of the city, as no case of infectious disease is admitted or treated in our institution. All cases, medical or surgical, are kept in the general isolation wards for a period of from one to three days, during which time the routine examinations are

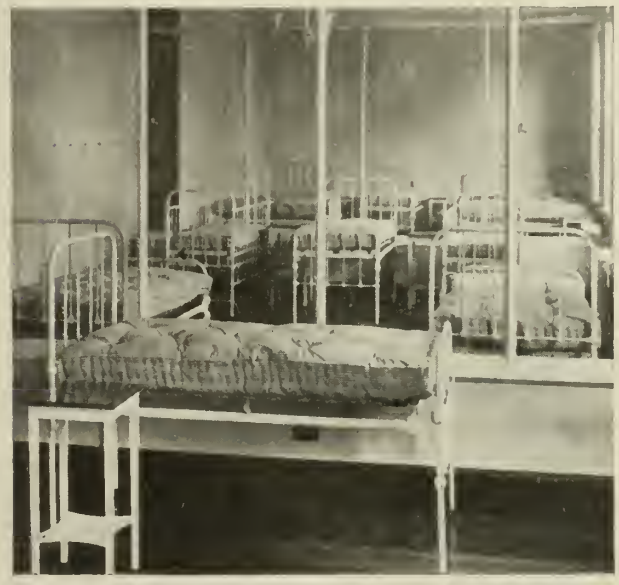

Fig. 2. The A. Jacobi Department for Children, German Hospital, New York. A ward.

made, and when it is considered safe the child is transferred to one of the general wards on the upper floors.

The general wards are situated on the second and third floors and consist, as you will notice on the plans, of four large rooms, each with wash basin and bowl and running water, separated from the fifth room at the end of the oblong. This separate unit is a sound-proof room where noisy or delirious cases are sent and where contagious cases, such as typhoids, are placed, because of the adjoining toilet which contains a separate compartment with steam sterilizer for the sterilization of bedpans, etc. In the walls in each room, which are indicated on the plans in little white subdivisions, are 12x12-inch compartments; each of these has a glass shelf at the height of 6 inches and closed by a metal door; these contain all the necessary articles used by each child, such as cup, toothbrush, thermometer, pus basin, wash basin, etc., these compartments are numbered and correspond to the number fastened to the foot of each bed in each room. Besides these wall cappings in each bath room there is a rack, with a corresponding number, on which are hung the towels, wash cloths, etc., so that no child, during its stay in the hospital, ever uses any article but its own. In the bath rooms there are also small toilets and bowls for those children well enough to be about; these are separated entirely from the toilets for the nurses' use. Each crib in the institution has a movable mattress and spring which may be raised to the upper level of the stationary sides, so that in making rounds it is not necessary to lean down or over the patient, but the child is brought up to the level of the stationary side.

If you will look at the plans of the second and third floors you will notice that by means of the glass partitions which separate the three large rooms, as stated before, the nurse, situated at any part of this floor, has an unobstructed view of all three units.

Since the opening of the division, I have had ample opportunity to confirm what I have stated previously, that these glass partitions also enable the children to see one another and enjoy each other's company to a certain extent, although not in the same room.

The second and third floors have each a playroom, located at the extreme end of the hall,

Fig. 3. The A. Jacobi Department for Children, German Hospital, New York. Sun parlor on roof

where those children well enough to be up are kept out of the general ward, so that they may not annoy those who are too ill to be about or who must be kept quiet. No child is permitted to play or walk in the rooms or corridors.

Each bed has over a thousand cubic feet of air, which is more than that required by the state board of health. In all the ward units there are base plugs for the use of electric apparatus, which make it possible to bring the necessary instruments to the bedside; so doing away with the

necessity of moving the child to the instrument. In the pantry on each floor is a large, white-enameled, stationary icebox, equipped with an air-cooling apparatus, with proper provision for the reception of milk and other articles. Next to this icebox is a smaller box or compartment

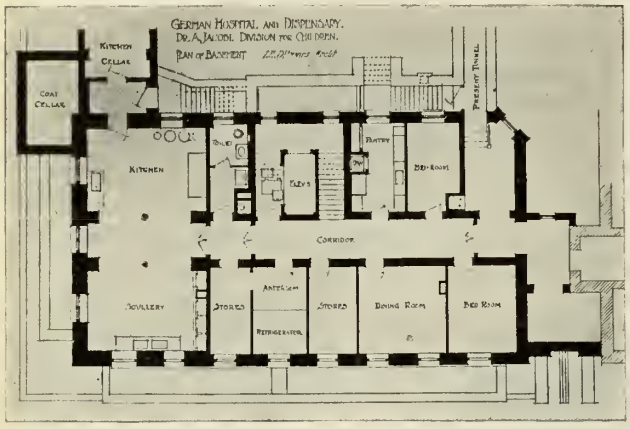


Fig. 4. The A. Jacobi Department for Children. Basement plan.

for the reception of cracked ice to be used in ice-bags etc. There is also a dumbwaiter shaft with a dial, showing at what floor the dumbwaiter is to be found. This dial obviates the necessity of putting the head in the shaft to locate the dumbwaiter, which has often caused serious accidents. We have also equipped the hospital with a clothes chute, lined with white enamel, which extends

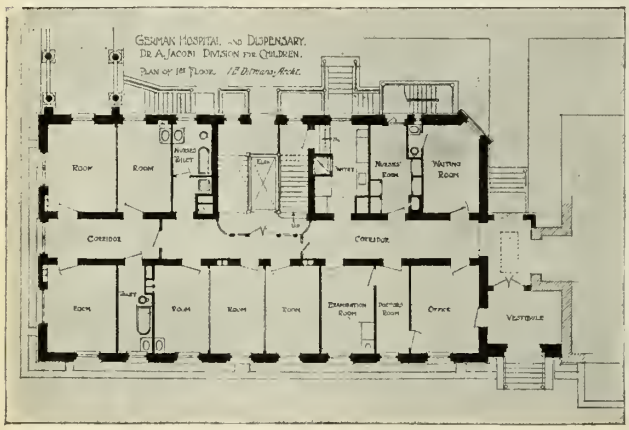


Fig. 5. The A. Jacobi Department for Children. First floor plan.

from the roof to the cellar; arrangements have been made in the cellar, where the chute ends, for flushing it. This clothes chute does away with the annoyance of having the soiled linens, etc., carried from one floor to another or on the elevator.

The fourth floor of the building is to be used for private rooms where parents may bring their children and stay with them if they so desire. On this floor, there is also a fully equipped laboratory, where all the clinical examinations are made.

The fifth floor consists of an operating room and the nurses' quarters.

Between the fifth floor and the roof garden is a sort of mezzanine floor, in which are kept the clothes of children in the hospital. These clothes are first sterilized and then placed in compartments in the store rooms.

On the top of the building we have placed a large roof garden covering its entire area. It has two

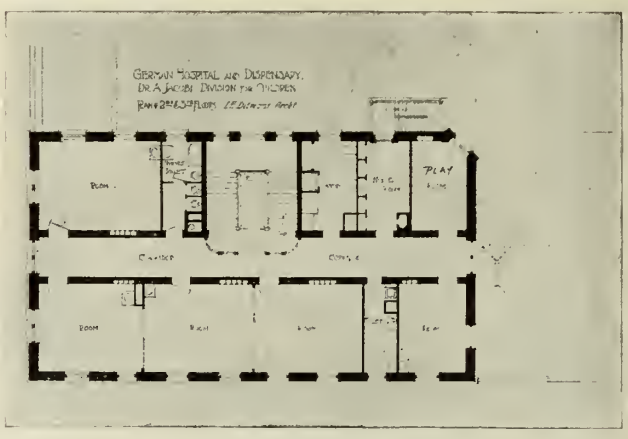


Fig. 6. The A. Jacobi Department for Children. Plan of second and third floors.

spacious sun parlors with exposures to all four points of the compass and is entirely surrounded with glass windows, a large door opening out on to the roof proper. The roof has a large stone coping with iron latticework and is so constructed that the children cannot climb up or on it, no matter how agile they may be. The sun parlors will be used as play rooms or treatment units, as the necessity arises. The roof garden is equipped with

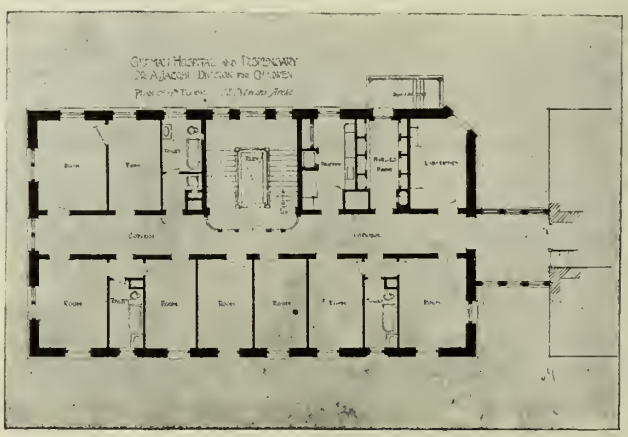


Fig. 7. The A. Jacobi Department for Children. Fourth floor plan.

nurses' quarters, medicine chest, toilets, etc., and also has a service room with icebox, dumbwaiter, clothes chute, as the lower floors have, so that if it becomes necessary in the summer time or at any other time of the year to keep the children on

this floor it can be utilized just the same as the other working units of the hospital.

I would like to call attention to the plan of each floor, showing the elevator and stairs enclosed from the rest of the building by glass door partitions, cutting them off from the hospital proper.

There is a large, roomy fire-escape extending

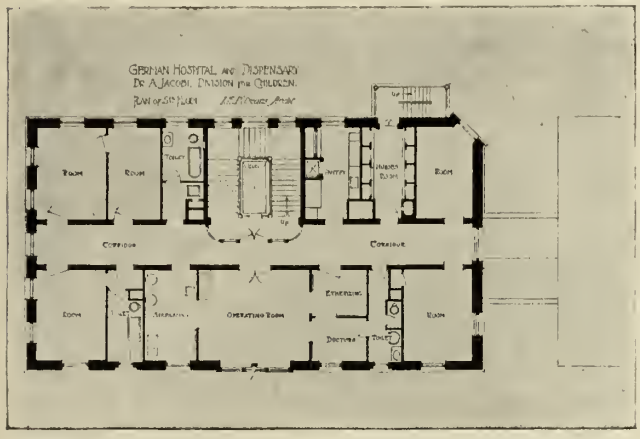

Fig. 8. The A. Jacobi Department for Children. Fifth floor plan.

from the roof to the ground floor; access to it is through the pantry on each floor, the doors having a patent bar lock which can be pushed open with the slightest touch of the finger.

The hospital equipment (beds, tables and furniture of all kinds) is finished, wherever possible, in white enamel. The walls of the building are painted with oil paint in a shade of French gray and the floors are made of hard wood.

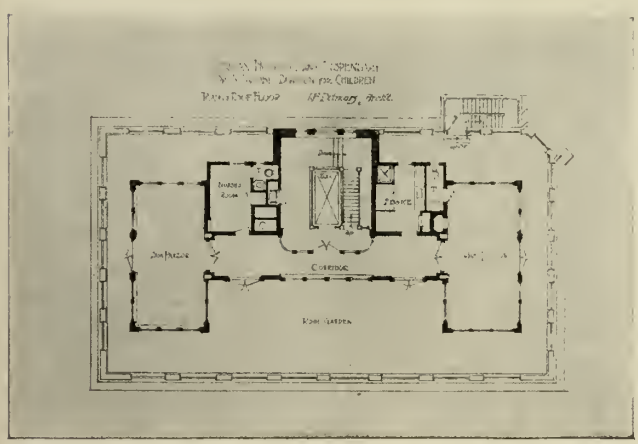

Fig. 9. The A. Jacobi Department for Children. Roof floor plan.

The visiting days to the hospital are Wednesday and Sunday afternoons from two to four o'clock. Each child is allowed two visitors, this privilege usually being restricted to the parents. No juvenile visitors are admitted to the institution. Every person entering the hospital, whether a physician in charge, or a visitor, must wear a gown furnished by the institution during his or her stay. No food is allowed to be brought in by visitors.

The hospital has fourteen beds in the quarantine division, twenty-two beds each on the second and third floors and provision for the accommodation of eight private patients.

It is our intention, if we can secure the funds, to establish a well equipped social service department in conjunction with the institution and to provide convalescent children with a modified kindergarten instruction.

There has already been established in conjunction with Columbia University a course of bedside instruction in pediatrics.

In the course of time we hope to be able to establish a department for trained infants' nurses and for post-graduate instruction in pediatrics for both the doctors and nurses.

Trusting to our earnest endeavors and the active cooperation of the public in general and our friends in particular, we hope for the speedy realization of the aims we have in view.

### A New Complaint

A German, whose wife was ill at a hospital in Brooklyn, called the first evening she was there and inquired how she was getting along. He was told that she was improving.

Next day he called again, and was told she was still improving. This went on for some time, each day the report being that his wife was improving.

Finally, one night when he called he was told that his wife was dead. Seeing the doctor, he went up to him and said, with a world of sarcasm in his voice:

"Vell, doctor, vat did she die of—improvements?"—*The Medical Pickwick.*

### Policlinico, in Rome, Receives Large Bequest

The recent announcement that the late Princess Vicovaro, who was Eleanor Spencer, of New York, has left a large fortune to the Policlinico, the most important hospital in Rome, is said to be of greater interest to the Eternal City than anything else outside of the war. Such munificent bequests are rarer in Italy than in America, and particular gratitude is felt because the Princess, being an American, might quite well have left her gift to her native country. The Policlinico is a magnificent modern hospital, wherein is found the best medical talent of Italy, but it has always been hampered by the lack of funds, as it is somewhat large for the modest means of a city like Rome. This bequest will enable it to become the best institution of the kind in Italy, and perhaps of all south of Vienna.

It was recently stated in England that if Kitchener had called for 500,000 nurses instead of 500,000 men for military duty he would have had the full number next morning. About the same time Lord Knutsford, in a letter to the London Times, declared that untrained nurses would be more acceptable if they would be photographed less, wear their uniforms more modestly, talk less in public about their patients, and not be quite so aggressive.

## FOODS THAT ARE MARKETED IN SMALL PACKAGES[1]

### Advantages: Cleanliness, Security Because of Makers' Reputation, Notice of Adulterations on Labels and Convenience in Handling by Housekeepers; Disadvantages: Increase in Cost, Misleading Containers—Reasons Discussed

By JOHN PHILLIPS STREET, Chemist Connecticut Agricultural Experiment Station, New Haven, Conn.

ALL beverages, all very moist or liquid foods, as well as food products which are preserved for transport and storage by "processing" or sterilizing, are necessarily enclosed in packages of some sort. Other kinds of food products, for which closed retail packages are not so necessary, are being sold more and more commonly in this way. The containers may be of glass, tin, wood, porcelain, stone, cardboard, or simply moisture-proof paraffined paper.

#### ADVANTAGES OF PACKAGE FOODS

The sale of foods in package form has many advantages. The most obvious of these is the protection from contamination by flies, animals and human manipulation, and by the dust and dirt of shop and street. In the ideal store this advantage would not be so striking, but in the average shop more or less infested by flies, frequented by cats and dogs, tenanted all too often by rats or mice, and served by attendants rarely immaculately clean and not always disease-free, a closed food package is of the greatest importance. Moreover, this condition in many cases obtains in the home or public institution quite as much as in the retail store.

A sealed package gives the buyer a reasonable assurance that he gets the food just as it left the factory. This is particularly important in the case of those manufacturers who claim specially clean factories and sanitary methods of packing by clean and healthy operatives. Many of our manufacturers have built up a high reputation for their goods, and the selling of these foods in package form, while incidentally an excellent advertisement for the manufacturer, also enables the purchaser to secure the particular brand he wishes and be assured of its integrity. Incidentally this shows still another advantage of purchasing foods in package form, namely, the encouragement to buy by brand names. The consumer who orders by telephone a "can of peas," or a "quart of vinegar," or a "bottle of vanilla extract," generally receives the particular peas, vinegar or vanilla extract which the dealer can sell at the greatest profit. If such a consumer receives foods of an inferior grade he has no one to blame but himself. Let us suppose that Jones has made himself famous for the excellence of his canned peas, that Smith's vinegar is surpassed by none, and that Brown's vanilla extract is of unusual delicacy. If the consumer will insist upon these particular brands of peas, vinegar and vanilla extract, he will aid himself by securing products of unusual excellence; he will encourage the manufacturer to maintain his high quality, and he will demonstrate to the dealer the importance of selling products of established character. Package foods are a most important factor in this intelligent method of purchase.

The sealed package in great measure protects against substitution on the part of the dealer. If the consumer wishes Smith's vinegar, the labeled package prevents him from unknowingly receiving Wilson's, Peter's, John's, or some other "just as good" brand. In other words, he is given the opportunity of knowing he receives just what he asks for.

Another important advantage of the purchase of foods in package form is shown in the case of foods which might be legally labeled in the large original container, but which are in no sense "pure" foods. A barrel of vinegar might be labeled "colored with caramel," a box of macaroni "Italian style, artificially colored," a bag of rice "coated with glucose and talc," or a barrel of molasses "contains sulphur dioxide," and yet it is exceedingly doubtful if, when any of these foods are sold "loose" to the consumer, he will be advised by the dealer of their compound character. In these days of rigid food inspection the manufacturer would scarcely dare to withhold this information from the purchaser of his foods in the form of small packages.

Under the Federal law and under the laws of most of the states, package foods must bear on their label a true statement of the net weight or volume of food they contain. The consumer is thus enabled to know just how much of the particular commodity he is receiving, and the large bottle partially filled, and the imposing carton often out of all proportion to the amount of food it contains, lose much of their opportunity to deceive the unwary purchaser. A "pint" bottle with deeply concave bottom and tapering top labeled "12 ounces," the extract bottle of two-ounce size,

[1]This is the fifth in a series of papers on Foods; in July and August, "Meat Extracts." These papers will be continued from month to month, covering most important topics on foods.

with sides so deeply paneled as almost to touch, labeled "one ounce," and the breakfast food carton made imposingly large to receive the "valuable piece of china or glassware" given away with each package, no longer should deceive the intelligent consumer if he avail himself of the protection the law affords him in requiring an honest label. This statement of weight on the label also protects the consumer from dishonest manipulation of weights or measures on the part of the dealer, a practice alarmingly prevalent.

Aside from the above considerations package foods offer further advantages to the dealer in saving him time, trouble and loss. Furthermore the attractiveness of many of the food packages adds greatly to the appearance of his store, and by this very attractiveness tempts consumers to buy. To a certain extent also the sealed package tends to standardize prices, a protection to the dealer and consumer alike.

Lastly, foods in small packages are a great convenience to the consumer, especially to those with limited storage facilities. The average city flat has little space for a barrel of sugar, a tub of butter, or a half-barrel of flour. This doubtless is unfortunate from the standpoint of strict economy, but it is "a condition, not a theory, that confronts us."

### DISADVANTAGES OF PACKAGE FOODS

Unquestionably, as a rule, the sale of food in small packages increases the cost of the food to the consumer. Generally the consumer pays for the attractive and somewhat expensive containers, either by an increase of price per unit of quantity or by decreased quantity at the standard price. In spite of the denials we hear so frequently, it would seem that the consumer must bear a large part of the cost of advertising these package foods. The writer once heard a prominent food manufacturer admit on the witness stand that he spent one million dollars annually in advertising his two brands of breakfast foods and his coffee substitute. Certainly this large expenditure must have been reflected in the price the consumer paid for these preparations. This item of cost is, in the writer's judgment, the chief serious indictment against this modern method of purchasing food. The force of this indictment, however, varies with the kind of food and the purpose of its purchase.

Package foods may in general be grouped into three classes. First, those obtainable in no other way, such as canned vegetables, certain canned meats and fish, certain relishes, condensed milk, wines and liquors. The growth of the canned vegetable industry is of the greatest economic importance to the nation, enabling as it does the manufacturer in time of plenty to store up for future use millions of cans of healthful, nutritious and appetizing food. Moreover, many of the foods of this class are amazingly cheap, but even here the universal rule applies, namely, the larger the container the cheaper the food.

The second class includes those foods which might, and in many cases should, be prepared at home, such as canned fruits, ketchups, jams, jellies, preserves, pickles, soups, mince meat and baking powder. The housewife is delegating more and more to the manufacturer her function as a producer of food. It may be that club life, church work, philanthropic activities, even bridge, may offer the modern woman wider fields of usefulness than the home preparation of food. It may be that the art of cooking is a lost art in the average home, and that in the rush and hurly-burly of modern life the average woman has not the opportunity, facilities, or perhaps the ability, to prepare or superintend the preparation of food at home. Whatever may be the reason for this constantly decreasing production of food in the home, the fact remains that it is one of the vital factors in the increasing high cost of living.

The third group includes those foods which one might better purchase "loose," such as certain breakfast foods, crackers, molasses, vinegar and dried fruits. The writer freely admits that where quality alone is to be considered the purchase of even the foods of this group in package form is not to be condemned, but the consumer of limited income has no more economic right to buy crackers, for instance, in small packages than he has to buy champagne, caviar, pate de foie gras, or a hundred other similar luxuries. On the other hand there are cases where the daintiness and attractiveness of the food are of prime importance. In the sick room, where frequently the appetite must be coaxed, these qualities are essential and this is especially true with pay hospital patients, where the most rigid economy is not required. But even here it is a question whether more emphasis should not be placed on the culinary skill of the cook, and whether less should not be left to the taste and imagination of the food manufacturer.

A disadvantage of the sealed package, although a minor one, is that in nontransparent containers the purchaser cannot see the food before buying—a serious objection in the case of such foods as breakfast cereals and dried fruits—which are not infrequently infested with insects. Of course any reputable dealer will replace such contaminated food, but the trouble and delay such an exchange entails is always annoying.

The size of the container often deceives the

buyer as to the amount of material he is buying. Bottles with deeply concaved bottoms or paneled sides, and breakfast food cartons, especially of flaked foods, are likely to be quite deceptive. A recent examination by the writer of about 2,000 packages of foods revealed the fact that many of them were sold in packages containing net weights of odd amounts. For instance, potted ham, 6.5 and 10.5 oz.; peanut butter, 7 oz.; condensed milk, 6 and 14.5 oz.; biscuits, 2.75, 5.25, 6.25 and 14 oz.; corn flakes, 10.5 oz.; rolled oats, 22 oz.; and mince meat, 10 oz. It hardly seems likely that trade exigencies demand these fractional weights, but the size of the package often leads the consumer to believe that he is receiving more of the food than is actually the case; that is, an even pound or fraction of a pound. Rolled oats, for instance, used to be sold in two-pound packages; at the present time it is generally offered in 22-oz. packages, but with a price no lower, if not higher, than when ten ounces more were delivered. Furthermore, it must be remembered that a No. 1 or No. 2 can of corned beef, for instance, does not mean one or two pounds of the meat, but 12 or 24 oz. The significance of these can sizes will be discussed in a later paragraph. The weight of the container is also frequently included in the alleged weight of the product. This practice is quite general with dried fruits, such as raisins, currants and prunes, "pound" packages of which usually contain 14 or 15 ounces net.

The requirement of the law as to a statement of net weight or volume, however, will probably in the near future do much to correct these abuses. The purchaser, if he reads the label, will know just how much food he is obtaining in any particular package. For instance, he will learn that the small box of cocoa containing one-fifth of a pound of cocoa and offered to him for ten cents is actually more expensive than the one containing one-fourth of a pound and costing 12 cents, although apparently they may be about the same size. He will learn that in a 25-cent bottle of flavoring extract he is obtaining more than 2.5 times as much as he would secure in a 10-cent bottle of the same brand. He will learn how much more expensive is the 2-oz. bottle of olive oil at 15 cents than the 4-oz. at 25 cents, or the 8-oz. at 40 cents. He will learn that the fruits he buys, thinking they weigh a pound, usually weigh only 14 or 15 oz. at most; that the attractively cartoned crackers, which look like a half pound, weigh only 6.5 oz.; that the bottle of vinegar, cider or whisky, often sold as a "quart," actually contains only one-fifth of a gallon.

The consumer, however, must clearly understand the limits to the usefulness of the information afforded by a statement of net weight or measure. Many foods, like canned vegetables and fruits, are, and must be, packed with more or less water, which is either natural to the product or is directly added. The weight of a can of vegetables, therefore, gives no information as to the quality of the vegetable or the relative amounts of solid and liquid contained in the can. One can may show a greater net weight than another and yet contain actually less of the vegetable or fruit in question. The statement of weight, therefore, conveys no further information than the amount of material, both solid and liquid, in the can. The following figures, obtained by the writer in examining canned vegetables and fruits, illustrates this point: different cans of canned peas weighing 22 oz. net contained from 27 to 50 percent of liquor; tomatoes weighing 32 oz. net, from 45 to 80 percent of liquor; string beans. weighing 20 oz. net, from 38 to 58 percent of liquor; and peaches weighing 32 oz. net, from 36 to 48 percent of liquor. The significance of the net weight of canned vegetables, canned fruits and similar products can be learned only by experience. The consumer will soon find out which manufacturers are packing their products honestly, and then by insisting upon those particular brands he will be assured that he is not purchasing inordinate quantities of water under the guise of food.

In this connection a word may not be amiss as to the significance of can sizes. Frequently consumers, and even dealers, are confused as to the meaning of No. 1, No. 2, No. 3, etc., when applied to canned vegetables and fruits. In the past when the consumer purchased a can of peas or corn marked "2," he believed he was getting two pounds of the vegetable, whereas in fact he received only 20 to 22 oz. The trade no longer leads the purchaser to believe the can number indicates the weight of the food it contains. The various can numbers have a definite meaning to the trade as to the measurements of the can, which are reasonably uniform even with different manufacturers. The amount of food packed in the various sized cans of course will vary more or less with the kind of vegetable or fruit. With canned vegetables a No. 2 can will contain from 20 to 22 oz., a No. 3 from 32 to 36 oz., while with fruits a No. 2 can contains from 10 to 14 oz., a No. 2½ from 14 to 20 oz., and a No. 3 from 18 to 25 oz.

In the last three years the writer has carefully determined the net contents of several thousand packages of food, and a summary of these findings is given in Table I. These will indicate the variations in weight likely to be found in packages of the same size for the different foods that are enumerated.

TABLE I. NET WEIGHT OF FOOD PRODUCTS IN VARIOUS SIZED CONTAINERS

| Material. | Range in Net Weight. oz. | Average Net Wgt. oz. |
|---|---|---|
| CANNED FRUITS | | |
| Apples, No. 3 | 16.9-22.6 | 20.1 |
| Apricots, No. 2½ | 16.8-20.0 | 18.8 |
| Cherries, No. 2 | 9.9-15.4 | 11.9 |
| Cherries, No. 2½ | 16.6-21.8 | 19.1 |
| Peaches, No. 2½ | 15.8-22.4 | 19.7 |
| Pears, No. 2 | 9.9-14.9 | 12.9 |
| Pears, No. 3 | 17.9-25.6 | 20.3 |
| Pineapple, No. 2 | 10.3-15.2 | 13.7 |
| Plums, No. 2 | 8.8-13.3 | 11.6 |
| Plums, No. 2½ | 13.3-18.0 | 16.3 |
| DRIED FRUITS | | |
| Apples | 11.0-15.3 | 13.4 |
| Apricots | 13.9-15.1 | 14.5 |
| Currants | 11.0-16.2 | 14.4 |
| Dates | 9.2-16.1 | 11.9 |
| Figs | 10.6-14.7 | 12.8 |
| Prunes | 11.9-15.4 | 13.5 |
| Raisins | 10.6-16.3 | 15.1 |
| CANNED VEGETABLES | | |
| Beans, No. 2 | 18.5-22.0 | 20.4 |
| Pork and Beans, No. 2 | 21.8-22.8 | 22.3 |
| Corn, No. 2 | 19.8-21.8 | 20.9 |
| Peas, No. 2 | 19.6-21.9 | 21.2 |
| Pumpkin, No. 3 | 31.6-37.7 | 36.0 |
| Spinach, No. 3 | 32.9-34.0 | 33.4 |
| Succotash, No. 2 | 19.3-21.6 | 20.8 |
| Tomatoes, No. 2 | 17.8-21.0 | 19.5 |
| Tomatoes, No. 3 | 31.0-36.4 | 33.3 |
| CANNED FISH | | |
| Clams | 14.9-16.4 | 16.1 |
| Fish Flakes | 7.2-10.1 | 8.5 |
| Herring | 16.2-18.8 | 17.5 |
| Salmon, No. ½ | 7.6- 8.1 | 7.9 |
| Salmon, No. 1 | 14.4-15.9 | 15.3 |
| CANNED MEATS | | |
| Sliced Bacon | 8.9-10.1 | 9.7 |
| Sliced Beef | 8.0- 8.8 | 8.3 |
| Corned Beef, No. 1 | 11.7-12.3 | 12.1 |
| Corned Beef, No. 2 | 23.4-24.8 | 24.2 |
| Boned Chicken, No. 1 | 12.8-14.1 | 13.6 |
| Potted Ham, No. ¼ | 3.6- 3.9 | 3.8 |
| Potted Ham, No. ½ | 5.1- 5.5 | 5.4 |
| Tongue, No. 1 | 11.9-13.2 | 12.6 |
| MISCELLANEOUS FOODS | | |
| Bread, 5-ct. loaf | 11.4-19.7 | 14.0 |
| Biscuits and Crackers, 10-cent | 1.9-10.0 | 5.5 |
| Biscuits and Crackers, 25-cent | 2.7-14.5 | 7.8 |
| Macaroni, 1-pound | 13.4-16.3 | 15.4 |
| Noodles, ½-pound | 7.2- 8.5 | 7.9 |
| Corn Flakes | 8.7-11.1 | 9.7 |
| Rolled Oats | 22.0-23.9 | 23.3 |
| Peanut Butter | 6.7- 7.2 | 7.1 |
| Preserves | 12.7-14.3 | 13.5 |
| Chili Sauce | 8.3- 9.3 | 8.8 |
| Chow-Chow | 8.4- 8.8 | 8.6 |
| Sweet Pickles | 7.6-10.8 | 9.1 |
| Cocoa, 3.2-oz. | 3.1- 3.6 | 3.3 |
| Cocoa, 8-oz. | 7.3- 9.0 | 8.1 |
| Chocolate, 4-oz. | 3.8- 4.1 | 4.0 |
| Chocolate, 8-oz. | 8.0- 8.6 | 8.2 |
| Ginger, 4-oz. | 3.9- 4.3 | 4.0 |
| Mince Meat, 10-oz | 10.9-11.8 | 11.4 |
| Rice, 16-oz. | 15.8-16.4 | 16.1 |
| Meat Extract, 2-oz | 1.7- 2.4 | 1.9 |
| Honey, 10-cent | 4.5- 8.8 | 6.4 |
| Honey, 25-cent | 11.6-17.0 | 14.8 |
| *Olive Oil, 4-oz | 3.7- 5.3 | 4.5 |
| *Olive Oil, 8-oz | 7.1- 9.0 | 8.1 |
| *Olive Oil, 32-oz | 30.5-33.3 | 31.7 |
| *Vanilla Extract, 1 oz | 0.9- 1.5 | 1.1 |
| *Vanilla Extract, 2-oz | 1.5- 2.5 | 1.9 |
| *Vanilla Extract, 4-oz | 3.6- 4.3 | 4.0 |
| *Lemon Extract, 1-oz | 0.9- 1.6 | 1.3 |
| *Lemon Extract, 2-oz | 1.5- 2.8 | 1.8 |
| *Lemon Extract, 4-oz | 3.5- 4.2 | 4.0 |
| *Miscellaneous Extracts, 1-oz | 0.9- 1.4 | 1.1 |
| *Miscellaneous Extracts, 2-oz | 1.7- 2.6 | 2.0 |

*Statement of volume in fluid ounces.

As stated above, in products like vegetables and fruits, the relation of solids to liquid is important. Table II gives certain data obtained by the writer in this connection.

TABLE II. VARIATION IN DRAINED SOLIDS IN CANNED VEGETABLES AND FRUITS

| | Size. | Percent Drained Solids. | Percent Sugar in Liquid. |
|---|---|---|---|
| Beans | 2 | 42-74 | ..... |
| Peas | 2 | 50-73 | ..... |
| Tomatoes | 3 | 28-57 | ..... |
| Apples | 3 | 50-71 | 6.4- 8.1 |
| Apricots | 2½ | 52-63 | 17.8-27-1 |
| Cherries | 2 | 45-72 | 13.4-44.4 |
| Cherries | 2½ | 52-69 | 7.2-28.4 |
| Peaches | 2½ | 54-75 | 8.1-30.8 |
| Pears | 2 | 49-73 | 10.9-21.6 |
| Pears | 3 | 50-69 | 9.9-19.4 |
| Pineapple, sliced | 2 | 48-73 | 19.2-30.9 |
| Pineapple, grated | 2 | 38-52 | 20.7-25.4 |
| Plums | 2 | 41-62 | 15.0-20.0 |
| Plums | 2½ | 43-58 | 14.8-26.6 |

The above table also illustrates another complication affecting the interpretation of net weight as applied to canned fruits. It will be noted from the last column that the density of the syrups in which the fruits are packed shows wide variations. This naturally has an important influence on the cost of the product and to a considerable degree also on the quality. Unfortunately at the present time the labels on canned fruits are not standardized, and the words "packed in heavy syrup" on the label of one manufacturer may have an entirely different meaning when used by another packer. This is particularly striking in the case of cherries, where the writer found the sugar content of the liquid to range from 13 to 44 per cent.

Surgeon General Rupert Blue, of the U. S. Public Health Service, announces that most of the male orderlies in all of the large government hospitals throughout the country will be replaced by women nurses by the first of next July, the opinion prevailing that women are best suited for this work. Orderlies will be retained for certain wards where men are preferable or necessary, and as assistants about the various hospitals, but the main burden of nursing will be placed in the hands of trained women. There will be no dismissals as a result of the change. Orderlies relieved from nursing duties will be assigned elsewhere. The appointment of women nurses will be made from an eligible list obtained through competitive civil service examinations in twenty-three cities of the East and West and along the lakes where there are naval hospitals.

A recent report of the Registrar-General of England is said to show an alarming increase of infant mortality throughout that country as a result of the war. It is stated that in London alone, during the thirteen weeks prior to July 1, children died at the rate of 200 a week in excess of the number dying in the corresponding weeks of last year. Shortage of physicians and nurses, the closing of many day nurseries and the averseness of the public to giving money for any purpose but the war are held to be responsible.

## PAINLESS CHILDBIRTH AND THE HOSPITAL

### Nitrous Oxide and Oxygen in Use for Years—Not to Be Replaced by Scopolamine—Morphia—Latter Has Restricted Place in Hands of Experts Only

By CARL H. DAVIS, M. D., Associate in Obstetrics and Gynecology, Rush Medical College; Assistant Attending Obstetrician and Gynecologist to Presbyterian Hospital, Chicago.

IF labor is a purely physiological process it should be as free from pain as are other physiological processes. From the records of labor among the American Indians and other primitive races we know that normally their labors are easy and relatively free from pain. Englemann states that: "Commonly labor is conducted most privately and quietly; the Indian squaw is wont to steal off into the woods for her confinement. Alone or accompanied by a female relative or friend she leaves the village as she feels the approach of labor, to some secluded spot, upon the banks of a stream is the favorite spot the world over; the vicinity of water, moving water if possible, is sought, so that the young mother can bathe herself and her child and return to the village cleansed and purified when all is over." But while the labor of the primitive woman was usually easy, in the presence of some pathological condition her agonies often ended in death.

But civilization with its artificial dress and customs has rendered woman more of a hot-house product, and physically less fit to perpetuate the race. At the same time the development of the brain has rendered the head of the child less suitable to the passage of the birth canal. While among the women of today easy and relatively painless labors are not rare, most women are in labor several hours and, unaided, endure considerable and often very sevére pain. Yet there is no logical reason why women should suffer during labor any more than in any other surgical operation. Every confinement should be considered a major surgical operation; one more fraught with danger than is the ordinary appendectomy.

During the last half century there has been a wonderful development in hospitals. We have in every city many beautiful hospitals with thousands of beds for the medical and surgical care of men, women and children. But how many hospitals have adequate facilities for maternity cases?

Within the past year a society has been organized whose aim is: "To promote all safe and efficacious means of securing painless childbirth." But far worse than the few hours of pain, worse than the death of the mother or child is the chronic invalidism which comes so frequently from the practice of midwifery by the careless and poorly trained physician or midwife. There are many more women operated in hospitals for conditions which followed poor obstetrics than are confined in our maternities. Women must be educated to demand clean and safe obstetrics. Competent physicians will make labor easy and relatively painless.

Simpson, writing on the history of anesthetics in midwifery says: "The ancients appear also to have attempted to relieve the pain attendant upon parturition by anesthetizing agents, as we may learn from the various Greek writers. Such a practice is mentioned by Platus in his Ophelion, and I may also quote the following passage from Theocritus, who says:

"For then the daughter of Antigone, weighed down with throes, called for Lucinia, the friend of women in travail, and she with kind favor stood by her, and in sooth poured down her whole limbs an insensibility to pain, and so a lively boy, like to his father, was born!"

Since Simpson in 1847 introduced anesthetics into obstetrical practice, a large number of drugs have been employed in the attempt to secure painless childbirth with safety to mother and child. The analgesia produced by a few inhalations of nitrous oxide and oxygen was used with excellent results by Klikowitsch of Petrograd in 1880, and by Winckel of Dresden in 1881. Winckel says: "The apparatus, which consists of a rubber bag like a pillow, is inconvenient, it must be confessed, but this is entirely subordinate; in abnormally painful labor it is at any rate an extremely important remedy." But owing to its cost, the crudeness of the apparatus used, and the fact that it was often given to the point of asphyxia, nitrous oxide did not come into use at that time.

Von Steinbüchel of Gratz first suggested the use of scopolamine and morphine analgesia in 1902. The following year he reported favorable results in a series of cases. Gauss made his first report in 1906. The method was tried by many physicians with varying degrees of success, but, until the recent visit of Gauss to America and the magazine publicity given his *Daemmerschlaf*, the use of scopolamine and morphine did not become a question of vital importance to the hospital and the physician. The method has been used in several thousand cases, and in the hands of the most skilled the results have been satisfactory in from

85 to 90 percent of cases. However, those who have had the largest experience are agreed that this method can be used only by the obstetrical specialist; it should be used only in a hospital which has a delivery room protected from all noise and confusion; the physician must have had a large experience with the drugs; a physician must be in constant attendance; the cases should be selected; the action of the drugs is uncertain; the patients are at times very hard to control, and failures are to be expected in not less than 10 percent of the cases subjected to the treatment. ment.

Some ten years ago Dr. J. C. Webster, of Chicago, began to use nitrous oxide and oxygen in operative obstetrics as a substitute for ether and chloroform, in cases where their use was contraindicated. Gradually he extended its use to all cases of operative obstetrics, and as a substitute for ether during the normal deliveries. Since July, 1913, the members of the obstetrical staff of the Presbyterian Hospital have used the nitrous oxide-oxygen analgesia during the entire period of pain causing contractions, in a considerable number of cases. In every case a few deep inhalations of the gas have relieved the severity of the contraction. In no case has labor been delayed, but rather it has been hastened because of better assistance on the part of the mother. It gives an increased control over the patient in that there are none of the hysterical outbursts formerly seen in the delivery room. No longer are the patients in other parts of the hospital disturbed by the outcries of the expectant mother. The babies cry as quickly after the use of nitrous oxide and oxygen as when no anesthetic is used.

The actual cost of the nitrous oxide and oxygen used in maintaining analgesia during the uterine contractions will not in the ordinary case exceed one dollar per hour. The longest we have found it necessary to administer the analgesia has been about six hours. With multipara it is rarely necessary to give it more than two hours. In primipara the labor is usually terminated within three hours from the beginning of the painful contractions. In maintaining analgesia the confidence of the patient is necessary, and mental suggestion is of great value. The more intelligent the patient, the easier it is to obtain satisfactory results.

Hatcher, in his report (Jour. A. M. A., 1910, LIV, 446) says: "H. C. Wood, Jr., studied the cause of death in 23 cases in which scopolamine and morphine had been used, and he concluded that at least 9 of those deaths must be attributed to the scopolamine and morphine, the death rate being one to 250 narcoses." In speaking of the comparative safety of anesthetics Louis Frank (Am. Jour. Obst., N. Y., 1915, LXXI, 630) says: "Available statistics show that the average mortality from chloroform is one in 3,000, whereas that of ether is one in about 30,000 administrations. . . . The comparative safety of nitrous oxide was demonstrated by the researches of Buchanan, who found after careful study of statistics covering many millions of inhalations of this gas that the mortality was probably about one in 5,250,000 administrations."

More and better maternities, with obstetrics practiced only by clean physicians on a scientific and surgical basis, is the great need of today.

We concede that it is easier to carry a hypodermic needle than a gas apparatus, but while the *Daemmerschlaf* may be used for selected cases in an especially equipped hospital, by a staff with a large experience in its use, the nitrous oxide-oxygen analgesia may be used safely and efficiently by every physician who is capable of practicing obstetrics. Drugs act differently, people have their idiosyncrasies, the hypodermic injection of scopolamine and morphine is beyond recall, but in the use of the nitrous oxide-oxygen analgesia we have eutocia without danger to mother or child.

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A committee appointed to investigate conditions at the New York City Hospitals and Schools on Randall's Island has recommended the following improvements: the immediate erection of a modern 200-bed hospital for helpless children, to cost $200,000; a unit cottage with a capacity of 100, with facilities for both living and education, estimated cost $50,000; living quarters for attendants, to cost $100,000; the repairing of an old building, including the installation of electric lights and new plumbing, at a cost of $150,000; and the expenditure of $50,000 for new equipment in the way of sewing machines, toys, educational aids and playground improvement. Both Mayor Mitchell and Controller Prendergast have expressed themselves as being in favor of the appropriation of funds to carry out the recommendations of the committee.

---

Miss Helen Scott Hay, formerly of Chicago, and for ten months supervising nurse in the American Red Cross contingent stationed at Kiev, Russia, is now in Sofia, Bulgaria, where she has gone at the request of Queen Eleanore to assist in establishing a model training school for nurses. Trained in nursing herself and an enthusiastic Red Cross official, Queen Eleanore has long wanted to provide adequate facilities for teaching nurses in her country. In fact, she made arrangements over a year ago for Miss Hay to take up the work, but at the outbreak of the war the latter was assigned to duty with one of the Red Cross units made up at Chicago.

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Plans drawn by Architect Leon E. Dessez for the proposed new municipal hospital for Washington, D. C., call for twelve buildings, with a combined capacity of 300 beds.

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## Admission of the Patient

After all is said and done, efficiency in the hospital contemplates the care and cure of sick people. Efficiency in the physical management will permit more and better work to be done, hence more sick people can be cared for and cured, because of various economies that may be practiced, and more orderliness in the scientific operations.

But the medical work is the thing for which the hospital is built and maintained, and upon the hospital's management of its part of the medical work will depend the whole character of the institution.

The medical staff may be composed of the best men in the community; they may be heart-whole in their faithfulness; they may be progressive and energetic; but unless their orders can be carried out effectively, their good work will go for little or nothing.

Staff men can only give orders; they are not present all the time to see that they are executed, hence the character and competence of their assistants are of the greatest moment.

This train of thought leads us to the intern and his status in the hospital, his duties, his responsibilities. This is not a homily on the intern; it is merely intended to call attention to one particular part of his work, namely, the admission of patients.

Every patient arrives in the hospital on one of three impulses: either he is sent in by a medical man as a private patient, by some one or some organization interested in him, or he arrives at the public admission rooms because he is sick and has no doctor.

However the patient arrives, there is something to be done for him at once, and it should be done intelligently. If a doctor has sent him in, and if the doctor is in touch with the activities of the hospital, he will usually send in a card with him, giving instructions for immediate attention, or he will call the hospital over the telephone, and give his orders. This technic takes care of itself automatically.

But the patient who comes of his own accord and without the advice of a doctor—generally the ward patient: what is to be done for him? There are no orders. Is he to lie without attention until the visiting physician's regular rounds, perhaps next morning? That is done in many hospitals, and it is wrong.

The patient should be examined in the admission room, of course, for purposes of distribution, and to insure against the admission of an acute infection, or at least against the exposure of other patients by putting such a case in the general wards.

The next step is the nurse's part; the bath, the beginning of the record, the temperature, pulse and respiration—and bed. Fortunately this part is usually efficiently carried out, because the pupil nurse corps is generally under the best discipline of any of the forces.

Then immediately the intern on the service, or the resident physician in a small hospital, should get busy. There should be a history written by somebody capable of writing it, the better and more experienced the historian, the quicker and closer will be the diagnosis. Then comes the physical examination; either the diagnosis is plain and obvious, or it is too difficult for the intern; in the former case, he should do or have done the necessary laboratory work, see about an x-ray if that seems to be indicated, and give the first nursing orders; if he cannot make a diagnosis, he should do, or order the work done, that will help toward this end, and give temporary orders; if the patient is very sick and in apparent danger from delay, and the intern cannot make a diagnosis, he should call the visiting physician at once, explain the case and get orders.

Whatever the case, and however it reaches the hospital, this technical course of handling will meet every exigency, and when the attending physician arrives on the scene, he will have before him all the data that the institution can provide to help him help the patient.

It would seem that such prompt and efficient work would be obvious; but there are hospitals in which patients are given no attention whatever, except the ordinary nursing care, until the attending physician arrives and gives his orders; then another twenty-four hours may elapse before the laboratory work and other diagnostic service is reported, and so from thirty to forty hours may pass before the patient is given intelligent attention.

### Old Men on Hospital Staffs

The insistence of the Philadelphia County Medical Society, in a recent report of its Hospital Committee, that the younger men on hospital staffs be given more opportunity, and the suggestion of the retirement of the older men, seem to have occasioned a good deal of discussion in many parts of the country, and among the staffs of many hospitals.

This is a question that cannot be settled offhand; and the solution cannot be the same in all institutions. The personal equation rules here as in so many hospital problems. But there are a few general principles that can be made to apply, and which, if persisted in, will cure most of the complaints that come from hospitals which seem to be afflicted with "dry-rot," occasioned, as their administrators think, by the retention of men on the staffs after their activities are over.

Let us at once agree on the one and vital point, namely, that the doctor needs the hospital far more than the hospital needs any doctor; and the corollary that the hospital makes and builds up the doctor, rather than the other way round.

If the above premises are correct, a doctor is of value to the hospital only so long as he is able to "deliver the goods." Many famous men, who did fine work in the past, are kept on hospital staffs "for the use of their names," or because of the private patients they send in. The latter reason is a good one, as going to show that they are actually working at their profession and have patients. The former reason is no reason at all.

Hospitals nowadays are predicated on work, not on some one's reputation. They are entitled to support and patronage solely on the score of their value to the community for the work they are doing. If any doctor on the staff is not contributing toward that work, he has ceased to be an asset, and a hospital is no place for an anatomical museum—at least if there is such a place, it should be out of the way of the workers. Every doctor who is posing and marking time, or loafing, is in the way of those who would work if given an opportunity.

It doesn't seem to us that the problem is properly stated when the age of a staff member is made a factor. How would it do to divide the doctors for retention or retirement, not as old and young, but into the other two classes—those who work and those who do not?

### Package Foods

Attention of the reader is specially called this month to the paper by Mr. Street on "Package Foods," to be found on other pages.

All too little attention is paid by institutional and home housekeepers to the condition of foods purchased for consumption. While we are thinking in terms of efficiency, purity and cleanliness, we have been too prone to judge of the condition and character of our food supplies by external appearance alone, or we are even content to leave the whole matter on faith to a heterogeneous number of people who must handle our foods before they get into our keeping.

Mr. Street's summary of the advantages of package foods leaves nothing to the optimistic imagination of the purchaser; he tells the whole story. *De gustibus non disputandum* is an old and true adage, but most of us would prefer our foods brought to us in sealed packages from a manufacturer who was willing and anxious to have his name identified with his product.

Even Mr. Street's mention of the probable greater cost of package foods has not quite so much significance when we think of the probable greater waste in foods bought in bulk and handed to us in flimsy paper bags, as they stand on the shelf and are shifted about the pantry or store room before they are finally used.

We are making very much these days of pure foods, and our federal government is going as far as it reasonably can be expected to go to prevent adulterations, over-watering and other harmful or expensive methods of marketing; but we owe the subject some care and precautions on our own account, and it seems to us that the best precaution we can take is to buy our foods from manufacturers who guarantee quality and cleanliness with the best asset they have, namely, their good name.

As for Mr. Street's paper: it is a most valuable exposition of a most important and much neglected subject, and we commend it to our readers for their thoughtful perusal.

### "All Work and No Play—"

It is said that work never killed anyone and that more suicides come from lack of it than from any other cause. But one can easily grow stale working at the same thing from hour to hour and

from day to day throughout the year. Some people find all their recreation and rest in merely changing the character of their work from time to time.

Why is not something of this kind thought about for the benefit of hospital workers?

The Gregg Shorthand School, with branches in the principal cities, is engaged in fitting young people for the business of life. Shorthand is rather an exacting profession—at least where experts are concerned; their employment calls for concentration—intensive application over short periods. Students must be taught, not only the theory and practice of their business, but they must be taught to conserve their strength, to husband their reserve energy and to save themselves. At least that is the way the Gregg School looks at the matter.

To carry out this policy the managers have devised a scheme of recreation that should commend itself to hospital administrators.

Students are worked hard during business hours, but every week there is a regular schedule of interesting and instructive visits. In the Chicago school, for instance, Mr. H. J. Holm, the manager, takes a group of students, mostly young women, to the stockyards on one afternoon, not specially to see the slaughtering, but the visits include the manufactories of the by-products, such as buttons, that are made out of blood and bone, catgut, made from sheep intestines, the pepsin and other pharmaceutical products. Another afternoon is devoted to the board of trade, the greatest grain market in the world; still another to the Field Museum, the home of the greatest Indian exhibit in the world and one of the greatest exhibits of wild animals. Another afternoon is spent in the Chicago Public and Crerar libraries.

On an afternoon spent at the Field Museum in Jackson Park recently, the school management had a picnic supper served on the beautiful beach, and afterward the whole crowd adjourned to the White City for the evening.

The school pays for everything, makes arrangements beforehand to have experts act as guides through the institutions visited, and everybody has a fine time. Young people who have lived all their lives in Chicago are taken to places they have never visited before. All these recreative periods carry an instructive essence, sugar-coated with pleasure.

This little story is told, not as an advertisement for the Gregg schools, but to illustrate a point, namely, that hospitals would give more to and consequently get more from their nurses and employees, if they dovetailed some instructive and pleasant diversion in between the periods of straining, mind and body tiring work.

## STATE CHARITIES' AID OPPOSES PLAN FOR BOARD OF CONTROL

### New York Association Would Keep State Institutions Under Separate Managing Bodies

The New York State Charities' Aid Association, through its committee on constitution revision, takes a firm stand against the proposed establishment of a single board of control to take the place of the several individual boards now managing the state's institutions.

"The board of control," asserts a brief recently issued by the Association, "would jeopardize the present high standards of the care of the insane by placing the state hospitals under control of a board which, in the nature of the case, could not be expert in knowledge as to the needs of the insane, the needs of the feeble-minded, and the other charitable institutions, and the needs of the state's prisons. With such a diversity of problems to deal with, the board of control could not give sufficient attention to any one to become expert in it. As a result, the work in one or more, and possibly all, would suffer. With so many institutions of so many different kinds, the actual work of the board of control would fall to subordinates, resulting in chaos and diffusion of responsibility."

In summing up, the brief gives the following four specific reasons why, in the opinion of the committee of the State Charities' Aid Association, the establishment of a board of control would be undesirable:

"1. The present state hospitals for the insane are operating at the per capita cost of 57 cents per day per patient—an extremely low rate and lower than any other institution of the same type on record.

"2. They are operating with such extraordinary efficiency that they have established standards for practically the whole country.

"3. A study made in three states by Henry C. Wright, now Deputy Commissioner of Public Charities in New York City, proved fully that the central purchasing of food supplies for all the institutions of all kinds is ineffective to obtain lower prices for food. In fact, the prices under central purchasing are higher than under separate buying.

"4. In many of the eighteen states where the Board of Control has been established, it has proved to be a device for injecting politics into the management of institutions. The standards of care in most of them have actually deteriorated, and movements are under way in many of them for a change of system."

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Chief of Police Foster N. Burns, of Tulsa, Okla., is of the opinion that every city jail should have a hospital ward. Chief Burns cites numerous instances in his experience and in the experience of the police departments of other cities where emergency hospital facilities in connection with jails would have saved lives. He mentions particularly the case of the man or woman found lying in the street and supposed to be suffering from alcoholism, when as a matter of fact the person may be seriously sick from another cause or suffering from a fractured skull. Usually such a victim, especially when discovered at night, is given little more attention than to be thrown into a patrol wagon and hustled into a cell to sober up on the cement floor of a "lockup," with the chance, as the chief puts it, of "waking up dead in the morning." According to Chief Burns, cases of this kind taken to hospitals are sometimes hastily diagnosed as alcoholism and refused admittance.

## HOSPITAL ASSOCIATION MEETINGS

# Papers Read at Seventeenth Annual Conference of American Hospital Association and First Annual Convention of Catholic Hospital Association—Other Papers Published in our July and August Issues

### MEDICINE AND THE WORLD WAR

### Surgery and the New Degrees in Science and Philosophy—A New Era in Teaching and in Hospital Management[1]

BY GEORGE DAVID STEWART AND JOHN WILLIAM DRAPER,
New York.

For many years, if not permanently, the devastation of Europe will place progressive medicine in the hands of America. This change would have come soon owing to the material and intellectual resources of our continent and to the cosmopolitan character of our citizens; but the great war has achieved in a day what would normally have taken years, and has thrust upon this country the duty of fostering the growth, uprooted and ruined in Europe, of that great science which, above all others, holds out hope to man and points the way to a future and truer civilization.

With the science of medicine constantly changing and enlarging, the task of teaching, always behind the science, becomes yearly more tremendous, and curricula are more and more overloaded. The writers, realizing the impossibility of giving consideration to the whole subject, wish to direct attention particularly to surgery and manifestly to only a few phases in the development and the teaching of this science, pointing out that if progress is to be made the growth of the two should go hand in hand. For, no matter how far we advance the science, if not taught to our successors, progress will be arrested. With our accustomed load of responsibilities and the added ones which have been thrust upon us by the world calamity each new step is fraught with additional responsibilities. That we are not alone in holding this pessimistic point of view is attested by such opinions as that of the historian Eduard Meyer (quoted by Russell, Atlantic Monthly, July 15, 1915), who considers Germany as the analogue of Rome and England as the analogue of Carthage, and looks forward to a succession of conflicts like the Punic wars.

The essayists wish to consider the following general topics: (1) hospital intern systems, and teaching as it now exists, particularly in the east, with some suggestions for betterment; (2) the modification and improvement both in scientific achievement and in teaching that may be expected from the form of corporation practice best illustrated by the larger clinics of the west; (3) the effects of admitting surgery into the select company of the graduate school and consequent recognition that it is on an equal footing with other philosophical subjects—a departure taken, we believe, for the first time by New York University.

Despite the fading distinction between medicine and surgery, the student, under the present system, makes his decision promptly after graduation whether to follow medicine or surgery. Ordinarily, after having selected surgery, he will have two years' service—frequently mixed—in which to do a little laboratory work, often a little ambulance work, keep bad histories, learn no pathology, and in his last six months to do a greater or lesser number of operations. The greater the number of these the worse, as a rule, for both his future and the public's welfare. We want to emphasize the conviction that we are letting loose on the public insufficiently trained surgeons, a matter in no sense the fault of the men themselves; and, also that we can and should offer the men greater opportunities. There are many others who hold the same view, as witness the following extract from a recent editorial in one of the daily papers, in which the author, while commending the organization of the American College of Surgeons, continues:

"Aside from the professional advantages we dwelt upon the prospective benefits to a long-suffering public by the proposed guarding of the community against the numberless raw recruits who increase the army of surgeons and pseudo-surgeons, especially in the smaller cities and towns.

"The loss of life and mutilation of limb resulting from this surgical invasion are incalculable; and it is a harrowing reflection for those who are familiar with these conditions to recognize the utter ignorance of the public as to these daily fatalities, and its consequent indifference."

The development of many surgeons usually takes place in another way. After a few years spent in practice, the man who wishes to adopt surgery will do one of two things; he will either attempt to practice major surgery at once or he will take a special course in an effort to qualify himself. In the former case he is criminal, if not a criminal. In the latter, after many years of medical practice he takes a six-weeks' course covering every known specialty and then announces himself as a surgeon. Such courses are usually taken for the deliberate purpose of revenue, in which case they do greater harm than good.

Thus the country is infested with two types of men—the recent graduate, who imagines he knows the indications for and can perform any operation; and the amateur physician-surgeon, who, as Munroe said, "operates for the excitement of the fee."

What can be done to obviate this condition of affairs? Today's medicine differs from yesterday's. The hospitals need more interns; the public needs better trained men. Every man who would practice in the future should have, without exception, at least one year of hospital training. With the increasing complexity of the practice of medicine, the hospitals need the service of every man; and with the rapid increase in the number of hospitals there will be abundant opportunity for universal hospital training. Many others have written upon this same subject, and there is a great diversity of opinion; all agree, however, in recommending more or less hospital training as an essential for the development of a surgeon. The routine examination of a patient requires much more time and more assistants than formerly. For example, twenty years ago a patient was thoroughly investigated as to clinical laboratory methods by a simple examination of the urine and the sputum. Now we must add to this, blood, stools, and gastric contents, not to mention the Roentgen ray, the various complement fixation tests, and many others. In a large hospital recently an attempt was made to secure a Wassermann on every patient, and the cases soon ran into the thousands.

If the hospital needs more assistants, then it follows that, leaving the financial aspect out of the question, it can keep more men employed, and be of great value to the patients themselves and to the future of society.

It being granted that more men are needed, then more opportunities are available, and there is only one thing

[1]Paper read before the American Hospital Association, San Francisco, June 22-25, 1915.

to stand in the way of universal hospital training, namely expense. The expense entailed in consulting a long line of specialists would be enormous even for the well-to-do; for the poor, it must be borne by the hospitals. So important is this to the public that many persons have suggested the community treatment, which will be referred to later.

The matter of research, too, while it may not interest the patient directly, is of vast importance and will have to be conducted by the hospital and the medical school, since it is essential to the development of surgeons and of the cultivation of their individuality.

### A POSSIBLE SCHEDULE

The time that it will take to make a surgeon, and the methods employed, are bound to vary, depending somewhat on conditions, somewhat on the man. The main thing is to set up and maintain a standard uniform enough to produce good workers without destroying individuality.

Bernays says, "After graduation the student must become attached to a hospital or he must become assistant to a hospital surgeon so that he may take part in the daily exercise of the science and art of surgery. Exactly how many years should thus be spent, I cannot say; one, two, or three years should suffice to turn out a surgeon who is capable and ready to offer his services to the public with a good prospect of making a useful and successful diagnostitian and operator, after the completion of further study."

Allen says, in discussing this subject: "First, thorough and broad instruction; second, prolonged hospital residence and post-graduate study; and third, the establishment of some standard of attainment which must be reached by men to gain their general recognition by the profession. If these ends be attained, the community and the general profession will not long remain in doubt as to the men who are deserving of their confidence and support. Such a standard would do much to protect the public from incompetent men, and to place in the hands of capable surgeons those facilities which they alone are able to utilize to the best development of their profession, and the best interests of humanity."

The plan of hospital reorganization that the essayists wish to suggest contemplates a short hospital training for all men (one year), longer training for the better men (promotion within the ranks), and, finally, remuneration after men have been in service for a certain length of time.

In order to give all graduates the advantage of the hospital it will be necessary, for some time at least, to shorten the time of hospital training to one year for the rank and file of men—which practically amounts to adding one year to the four years' course in medicine as now given, a step long favored by many educators. To make better trained men, however, it is proposed that the abler ones be given additional opportunities, so that at the year's end they may be offered advancement, the promotion being based on examination and knowledge of their capacity, character, and achievement, in part, at least in creative work. This amounts to promotion within the ranks and should be based strictly on merit, determined by fitness. At present, when a student after graduation selects surgery, he will continue in surgery, no matter how unfitted he may turn out to be; and at the end of two years he will consider himself a surgeon and be willing for a consideration to offer his services to anybody. By the method of promotion within the ranks, if he has not the capacity to become a surgeon, he will be dropped at the end of his first year. The knowledge that a few of their number at the end of the first year will receive promotion, and that a still smaller number may be appointed to positions as residents at the end of the second year, will keep alive a constant striving and ambition, and bring out the best that is in each one. This has recently been offered by one of the writers for adoption as the basis for the intern system of Bellevue Hospital.

This compulsory hospital year, with a preliminary compulsory academic year following high school added to the usual four years' course, will amount to a six-year course in medicine, and it is believed by the essayists that this offers a better disposition of the time than to compel men to possess an academic degree preliminary to the study of medicine; at least, until much of the useless matter now taught in the academic as well as in the medical schools is abolished, making room for more profitable work.

To amplify, it is believed that under existing conditions, one year of special preparation following high school, and one year of hospital training following graduation, are of more value to many men than the four years spent in acquiring an academic degree. After all, the fact is that we are dealing with the average man who is going to practice among his average fellows, and there is such a thing as over-training in medicine, with consequent loss of initiative and efficiency.

It must have been observed by all educators that the ordinary human mind is capable of acquiring a certain amount of knowledge, and after this has been stored, the limits of capacity have been attained, and the owner, if pushed, becomes stale. This accounts for the phenomenon that often presents itself when a student, possessing an academic degree, is outdistanced by one who holds only a high school diploma, but is able to keep up steam all through his medical course. Heredity, no doubt, has as much to do with these phenomena as environment, but the one is immutable while the other is subject to modification. Take such a man of the rank and file, gone stale—take him from the task of acquiring, give him applied work; close his books, for the time at least, and under the stimulus of his environment and problems he will develop again along other and useful lines. How helpful it would be if a feasible index or measure of a student's real limitations and capacities could be found! Such a scale is as necessary to medical education as it is to commerce and the mechanical arts, where it has long been sought. We will hail with delight the medical efficiency engineer.

It will be argued that such a schedule would take a great deal of time, but it must be observed that it is capable of infinite variety and, depending on his fitness and ambitions, the young man may drop out at the end of any one-year period or at the close of the whole period. If he stays through and is fit, he ought to and likely will be promoted in the service of the hospital and university.

In the case of those whose service is long, it is believed that some form of payment should be arranged for each year after the first, and certainly after the second year of service. Indeed, it is to be expected that when the public, represented particularly by the lay hospital boards, awakens to the vast economic principles involved here (for every day the sociologic side of hospital work becomes clearer to all) they will be willing to pay even the interns. It is at this time that the average man, having spent all his family can afford, needs to earn at least money enough to support him, and it is believed that under some such plan he may receive fully as much as is collected on the average by the beginner in embryonic and essentially unproductive practice.

No doubt many other schedules will be suggested to fit special environments, but as we have already stated, the important thing is to make a beginning.

The development of the science under the continental system depended, as has been stated by a surgeon, upon amazing patience in pursuing long courses, upon accurate knowledge of anatomy, upon familiarity with gross pathology, willingness to serve long apprenticeships, and a devotion to a life with but small compensation. It might be and is urged in opposition to the continued success of these methods that there is a rather noteworthy and widespread lack of the application of the laws of physicians to continental surgery and that a long period spent as assistant is almost certain to repress initiative and to subordinate individuality.

Certain it is that the impression gained by an American surgeon visiting the continental surgical clinics, aside from the marked contrast in the handling of the individual patients, is the difference in technical skill. Good dissectors are common, but surgeons are not longer bred in the dead-house. Rare, indeed, is the American surgeon who would choose to be operated on on the continent in preference to America! The poorer technic and the persistence on the continent of the pathological era in surgery are the two important sign posts which pointed to the early transfer of surgical progress to America long before the war.

Even admitting its value, it may not be concluded that we can transplant these methods to American soil any more than make student duels popular. Before the transplant could grow the entire environment would have to be changed. For instance, there the youthful doctor receives respect and has opportunity, and his small salary is sufficient; here, without a practice, he finds little comfort in watching a broker or manufacturer who has a five-thousand-dollar limousine and a box at the opera, both of which may be denied to himself for his entire professional career. Nor is the time urged in any of these schedules long as compared to that of the practitioner of Pare's time, who lived in the house of the master for two years in Paris and then followed the Spanish army in the low countries for four years longer to see whether the Italians or Germans or Spanish had any advantage over the modest Ambrose, who wrote: "I have certainly touched the mark whereat I aimed so that antiquity may seem to have nothing left wherein it may exceed us besides the glory of invention, nor posterity anything left but a certain hope to add some things, as it is easy to add to former inventions."

Such is a review of the well known system of hospital training generally received by the young surgeon. In brief, he is taught a highly technical therapy out of all proportion to the training given in diagnosis. We do not mean to imply by this that the training of the young physician is one whit better, for it is at least equally lacking; but we are here particularly concerned, as already stated, with the student who is to become a surgeon. Because of the greater damage and of the greater good he can do, it is well to improve his standing first.

Turning now to the second point under consideration, it is a certain prediction that the best results in the future will be largely a matter of team work. Medicine is too complex for any one man to attain a complete understanding for any considerable part. In the old days, a student went into the house of the master, who became his preceptor. Ordinarily, their reciprocal relations were not of much advantage to either. The preceptor told stories and the student compounded Gregory mixtures. Today we believe that after graduation the student, now a doctor, should become closely allied with older and busier men. It is easy to see that the benefits are not by any means one-sided and that added ones should accrue to both or to all the members of this medical partnership. Indeed, the first thing that strikes one is the value of that free discussion and consultation which takes place without added expense to the patient.

Who would think today, as Ochsner well says, of attempting to operate a shoe factory by the methods of fifty years ago? That is what many hospitals and physicians are still trying to do; no wonder they are outstripped by institutions and men using modern equipments! Thus has come about the medical corporations—best developed in the west and for the time, at least, answering admirably the intricate requirements of present-day medicine.

If today calls for corporate medicine, communal medicine may be the method of tomorrow. Mention has been made on the one hand of the quasi-public nature of our profession, of the direct and vital interest in it which every layman has or ought to have; of the complexity of our problems, the impossibility of any one man being able to solve or even to grasp them all; and of the expense, on the other hand, of submitting them to a group of specialists; of the necessity on this account for team work; of treatment by companies of physicians or by hospital staffs. All of these tend to make treatment, at least preventive treatment, a matter of *institutional* care. This has been done here and elsewhere by boards of health, and in England under the insurance act; a large part of the medical profession have become public servants and are paid for their public work out of the public treasury.

Discussing the possibility of medicine becoming institutional in the future, particularly preventive medicine, the retiring medical officers of the New York State Board, in a recent interview, have pointed out the tendency in this direction, but have refrained from predictions.

In passing, he states that it is believed that under the Lloyd George Insurance Act much of the medical service rendered is perfunctory, and cites the further danger that doctors may lose initiative. As to the possibility that this will come about, one can at present only class the act with the referendum and recall, or rather, with government ownership of railways and telephones. So far as we know, these are still *sub judice;* to make them a success, the whole order of the world will have to undergo readjustment. The essayists are far from believing, however, that such readjustment may not come or, indeed, that it may not already be close at hand. In any event, they stand uncompromisingly for the preservation of individuality even at some loss of efficiency.

Turning from the hospital intern system and corporate medicine to the surgical training of the universities, it is timely to inquire as to what factor has been at work in causing the universities to admit their departments of surgery to their graduate schools. It is because the university has recognized in the laboratory of physiological, surgical research a factor of great educational value and a link between applied surgery and the natural sciences.

Laboratory methods in teaching surgery to undergraduates were first shown to be of permanent value about fifteen years ago. Surgery is indebted to W. S. Halstead for the stabilizing of this innovation, and the present position of the laboratory unit in departmental work is due primarily to the genius for teaching of this far-sighted man.

Halstead's ability for training men is second only to his capacity for surgical research, and he early discerned that the surgical laboratory in the hands of the head of a department of surgery would be an invaluable tool for evolving new surgical facts and creating a new race of surgeons whose viewpoint would be philosophical rather than technical.

Since then the rapidity of the growth of the surgical laboratory in our leading universities has been truly amazing, each prominent medical school being now more or less thoroughly equipped with the mechanical requirement for such a unit. The laboratory has become an integral permanent division of each surgical department, and as in all cases where growth has outstripped adaptation, the material equipment having outgrown the academic application, it may be well to pause and to consider some of the pressing problems which have thus arisen. Prominent among these are, what should be taught, to whom it should be taught, and the time which should be devoted to the course. Fixed must be the growing conviction that the surgical laboratory staff, to accomplish the best results, must be given full hospital facilities, together with recognition and promotion for achievement at the same rate at which it is now given men who work only in the dispensary and the wards. This will come with further enlightenment. The necessary hospital readjustments which are inevitable as the graduate surgical student takes his place in the wards, are likewise subjects for thought and action. For the advent of such workers, whose advanced degrees will be won as much in the wards as in the laboratory, together with the application of a system such as proposed, will mark the passing of the merely technical intern. By the system of rotation proposed, the surgical residents will become medical academicians first and technicians afterwards. We can depend upon the laboratory to break the evil and antiquated conception of a distinction between medicine and surgery, and to give a new and healthy viewpoint.

The problem of coordinating the workers and of interlocking their results is by no means an easy one, but a correlation of the hospital ward, the dispensary and the surgical laboratory for undergraduate and graduate teaching and for hospital welfare alike is necessary. In the earlier day, not by any means remote, this was a simple matter, for the granting of clinical opportunity in the hospital and promotion of the teaching staff went along hand in hand almost automatically. One factor tending to simplify conditions of these earlier days was that surgery was very justly considered by the university authorities as a technical art, quite outside of the academic pale, nor could any one justly assert, however partial he might have been to that art, that the academicians were incorrect in their viewpoint. Now, however, the universities have begun to admit their departments of surgery into their graduate schools on the same basis as physiology and anatomy, granting the usual advanced degrees in science or philosophy for the study of surgical problems; and such degrees will be granted for the studies upon the human as well as upon the lower vertebrate body—the whole question being obviously one of comparative mammalian pathological physiology. Departmental heads, therefore, must promptly recognize that the old barrier between so-called "practical" and "theoretical" workers in surgery was a bad one. This position has just been taken by New York University. It must give place to the modern conception that laboratory training, with its logic, its inductive and deductive philosophy, far from unfitting men for the work of applied surgery, certainly equips them for the best and most progressive constructive work. The writers of this article wish to make it clear that they consider bedside work essential, but that no amount of it can ever take the place of laboratory training in the making of a surgeon, the one being complementary to the other. The teachers of the greatest post-graduate school in the world, the Mayo Clinic, hold that the operative technic is the last to be considered and the fundamentals of diagnosis the first, and with them we heartily agree. Diagnosis has its roots deep in bio-chemistry and physiology. The profession looks to the hospitals in no less degree than to the medical schools to support and give proper advancement in the wards to young men who elect to spend a large part of their post-graduate time in the study of these sciences. Otherwise, if preference is given to men who simply do ward work, men who seek hospital services will fear to give requisite attention to research.

The following quotations from Deaver (Deaver and Pfeiffer, L. I. Med. Jour. July, 1915) serve well to indicate the trend of modern surgical thought:

> "If a medical school can produce graduates who think correctly and advise wisely in surgical diseases it will have accomplished its proper task. The development of surgical sense, of a correct understanding of the role of surgery in prevention and cure, should be the aim of instruction; methods, procedures and handicraft are secondary considerations."
>
> "The best book on surgery is the latest work on physiology."
>
> "The mere craftsman is no longer entitled to be called a surgeon; he must be a biologist, bacteriologist, and pathologist. Any course in surgery which does not prominently recognize the changed relations between the head and hand of the surgeon is not modern and is not satisfactory."

It is our impression that the modern department of surgery must consist of three closely correlated divisions, to-wit:

1. Applied or therapeutic surgery.
2. Diagnostic or deductive surgery.
3. Experimental or inductive surgery.

These three are not named in order of relative importance, but in order of their evolution. It seems not improbable that when arranged in accordance with their true value this order will be reversed. Such a rearrangement would lead the student through induction, from simple experimentation to deduction or diagnosis, and finally, to the applied or therapeutic side of the knowledge. The deductive method is obviously fitted to the mature mind of wide experience; the inductive is essentially the method of the young mind, with little or no experience.

We agree with Jonas, who says that principles, rather than technic, should be taught in surgical laboratories; and this conclusion is based upon our fourteen years of experience in laboratory teaching. We are convinced that much evil may result from routine teaching of operative technic, for one of the objections of today's training is that technic has been made too easy. Is not this the lament of every well trained surgeon who is obliged to spend a large part of his time in repairing the damage done by technicians who, unfortunately for the patient, were nothing more than mere craftsmen? Such lacerations are not longer to be confounded with operations based on physiology, however cleverly they may be executed, for they give bad results and discredit surgery. Undergraduate technic should be learned chiefly in the minor surgery, in bacteriology and upon the human cadaver. The surgical laboratory should be open to the senior students only and to those in whom the scientific mind is coupled with manual skill. Just what the post-graduate laboratory teaching should be is still, as intimated, a matter of doubt, but the following outline has proven serviceable. Its best use, perhaps, is to illustrate that more and more surgery is coming under the domain of law, and thus amply to justify its acceptance by the graduate schools of philosophy. As has been written:

> "All mundane events are the results of operation of law. Every movement in the skies or upon the earth proclaims to us that the universe is under government.
>
> "Physiology, in its progress, has passed through the same phases as physics. Living beings have been considered as beyond the power of external influences, and, conspicuously among them, man has been affirmed to be independent of the forces that rule the world in which he lives."

We are at the end of the trail. Modern surgery has helped disillusionize us:

A. Alimentary tract.

1. The dynamics of the alimentary canal. Dilatation, stricture, ulceration, tetany, atony, autonomic relations, heredity.

2. Internal secretions of the duodenum in relation to death from intestinal obstruction and auto-intoxications.

3. Law of organic compensation in special relation to surgical therapeusis, ablation and the post-operative readjustments of the organism, ileostomy and the vicarious assumption of colonic function. Colectomy, gastrectomy.

B. Urinary tract.

1. Dynamics of the ureter and bladder. Dilatation and law of compensation. Stricture, neuro-muscular impairment.

2. Paramount importance of the ureteral prostalsis over the uretero-vesical valve. Hydronephrosis and renal infection.

3. Surgical analogy between the alimentary and urinary neuro-muscular tubes and valves.

4. Uretero-enteric anastomosis based on surgical physiology.

C. Cerebro-spinal system.

1. Hyperthermia in connection with decompression.

2. Experimental studies in increased intradural pressure, concussion, contusion, etc. Experimental optic neuritis.

3. Experimental spina bifida. Relation of heredity.

The admission of surgery to academic university standing is a step of great importance, not alone in itself but in the opportunity which it creates for the hospitals to increase the number and quality of ward workers. The essayists feel that this departure may be the vantage ground of many new lines of thought and action.

The distinction between medicine and surgery has faded almost entirely away, and with it the old idea that the "practical" man, whatever that meant, was superior in applied work to the so-called "theoretical" man, who might decide to turn his attention in part to applied surgery. Laboratory studies must be put on equal footing with ward work in hospital recognition and advancement.

Hospital services should be mixed, but the mixture must be constant, not alternating. Medical and surgical wards should be much more closely identified and all petty strife between the services eliminated. It is also believed that the time will soon come when the so-called medical man will visit the surgical wards, and the surgeon be made welcome by his medical confrere at the bedside of patients who may in no sense require operation.

Indeed, if one considers the frequency with which the operating doctor visits and inspects the cavities of his patients, there to see the living pathology rather than terminal dead house conditions, it could in no wise be considered unjust if one applied to the surgeon, rather than to the physician, the term of internist.

All new hospital cases should be admitted to a diagnosis ward for impartial study. It is absurd that sectarianism should longer be tolerated in medicine, in view of the healthy agnosticism which is rapidly replacing the dogmatism of the past, and of the broad and generous viewpoint with which medicine and surgery have recently been endowed because of their acceptance of scientific truth.

Full recognition by the graduate schools and a free hand to correlate surgical studies upon lower mammals with coordinate studies upon the highest mammal, man, in the surgical laboratories and in the hospital wards, will tend further to fuse medicine and surgery, improve the grade of students, diffuse knowledge, and ultimately serve to lighten the burden of fostering medical progress which has suddenly come to America because of the great war.

## The Operating Room[1]

BY HERBERT O. COLLINS, M. D.,
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Of the various departments of the average hospital, the chief interest is often found in the operating rooms, as the center of attraction for both staff and nurses. This is but natural, as the surgical service dominates many hospitals, and there is ever a certain element of both mystery and efficiency about the work of our best operating rooms.

Hospital superintendents have here found a fertile field for the working out of their choicest hobbies; architects have vied with each other in the use of expensive building material; lighting experts have studied the use of various devices, without as yet having discovered the ideal light, and dealers in hospital equipment have been diligent in the manufacture and sale of complicated and beautiful apparatus; whence we are tempted to begin our subject with the question, "What *is* an operating room?"

Several years ago the writer visited about forty of the leading hospitals of the country for the purpose of studying their construction, equipment and organization. And, after a survey of that kind we are tempted to offer several definitions of an operating room, as exemplified in modern hospital construction, as follows:

1. An operating room is a place for the exhibition of samples of expensive marbles and tiles.

2. It is a room designed as a suitable background for the proper display of the white enameled, nickel plated, and often mechanically complicated apparatus of hospital supply houses.

3. It is a stage on which the surgical nurse is the leading lady, the assistant nurses and interns play more or less important parts, and the operating surgeon is the hero.

But if we consider that the hospital is really designed for the benefit of the patients and that the chief object of the average patient in a hospital is to recover his health as rapidly and easily as possible, I would rather define an operating room as follows:

1. An operating room is a workshop, in which everything is designed for the assistance of the workers, and where there is nothing that may be considered as superfluous or unnecessary, or planned only for show.

2. An operating room is also a scientific laboratory where many questions in anatomy and pathology, or in surgical technic, arise and are solved.

3. It may also be properly looked upon as a training school for young surgeons, and as a very important department of a training school for nurses, where assistants gradually acquire the experience and training necessary to qualify them as principals, and where the operator himself, no matter how great may be the experience he already has, is constantly adding to his fund of surgical knowledge.

With the latter definitions in mind, the chief characteristic of the operating room, as far as its construction is concerned, should be extreme simplicity. If the floor be of tile, it is simply because a hard vitreous tile wears better and is more easily cleaned than any other known at the present time. Marble walls may add to its beauty, but they also increase the expense, without having any particular advantage over a smooth hard plaster, well enameled. Plumbing fixtures should be carefully selected in order that they may be easily cleaned, readily repaired, and may serve the purpose for which they were intended. The same general principles should apply to furniture and apparatus. It should be simple in its construction, dura-

[1]Paper read before the First Annual Convention of the Catholic Hospital Association, Milwaukee, June 24-26, 1915.

ble, and limited to those pieces absolutely necessary for the work to be accomplished.

The question of the proper lighting of the room is important, yet it need not be difficult if certain principles are recognized and adapted to the special location of the room to be considered. Skylights should be avoided where possible, as they are apt to be dirty, dust catchers and dust distributors in spite of the most careful attention, and have a tendency to sweat in cold weather, dropping water upon the table. A photographer's window set in the north wall will give much better light and is safer. For artificial lighting, most of the expensive fixtures on the market may be avoided, if we remember that all that the surgeon wants is an ordinarily well lighted room, with an additional arrangement by which he can, at will, have a rather intense light on the field of operation, avoiding shadows and unnecessary heat.

What has been said regarding its construction and equipment may be repeated as applying to its organization and operation. For here again simplicity should be the keynote. It is usually the tyro in surgery who requires an army of nurses and interns to assist him in an operation, and who stacks the table high with instruments and dozens of different kinds and sizes of towels and sponges, till everything is confusion, and the room loses sight of efficiency in a wilderness of unnecessary persons and things. It is not unusual to see from ten to twelve people engaged in the performance of a comparatively simple operation, each with his own duties assigned to him or her with a nicety that can only result in danger to the patient and no great advantage to anyone.

How different is this from the well organized operating room service, from which everything and everyone not actually needed has been eliminated, with a thoroughly competent operator. For here we find the number of assistants reduced to four or five; namely, the assistant to the operator, the anesthetist, the sterile nurse, and one unsterile nurse. Perhaps an orderly may be needed during part of the time, to lift the patient or to do other heavy work, but it is seldom that he needs to remain constantly on the floor. If another pupil nurse be added, in order that she may prepare herself gradually for the more important duties of acting later as a sterile nurse, that is only part of her training, and she is not necessary to the operation itself.

The relation of the operating room to the surgical wards is important and is provided for in various ways. Usually the surgical nurse has no duties outside the operating rooms, and the wards are under the charge of head nurses, responsible directly to the superintendent of nurses. The disadvantage of this arrangement is chiefly to be found in the divided responsibility and variation of methods, always bad in a hospital. If possible, the surgical nurse should at least be responsible for the preparation of the patient for operation, as well as for the operation itself. And if she can also have some supervision of the subsequent dressings it is still better. For she alone of all the nursing force is most likely to be familiar with the special methods of the operating surgeons, the nature of the preparation best suited to the operation to be done, and during the after-care she will best know what is most needed, having seen the operation. Just how this can best be accomplished will depend largely upon circumstances, the size of the surgical service and the general organization of the hospital. But it should be worked out in accordance with the principle of fixed responsibility and uniform methods—in both of which we, no doubt, all agree.

Should the assistant to the operator be a graduate surgeon, brought in from outside the hospital, and selected by the operating surgeon? Or should he be an intern and should this be a regular intern's service? This is a question which can hardly be answered in a general way, but will need to be considered in connection with the problems to be met in each individual operating room service.

There are many advantages, no doubt, in allowing an operator to choose his own assistant, as this gives him an opportunity to select some one already trained, and a chance for the operator and assistant to develop a degree of team work not to be expected when the assistant is an untrained intern, changing every few months; and if this arrangement is for the benefit of the patient, little room is left for argument in favor of allowing the intern to act in this capacity.

On the other hand, is it not true that in the vast majority of operations the service of the average intern is sufficiently skilful to enable him to act safely as a first assistant, taking it for granted that the operator himself is perfectly competent and that the assistant works constantly under his direction. And we must not be entirely forgetful of the fact that the hospital owes the intern an obligation which it has no right to ignore. For that hospital which does not consider itself as an educational institution as well as a mere boarding house for the sick is leaving unoccupied one of the most important parts of its legitimate field. Much of an intern's work is routine and more or less uninteresting; yet it must be done, and in most cases he receives nothing for his time and skill except his bare living and his training. I believe, therefore, that as far as it can safely be done, we owe it to our interns to give them some active work in our operating rooms, instead of expecting them to stand idly by, as spectators—a role which we must remember they have already filled for several years, while attending clinics.

There may be exceptions to this, in connection with certain difficult operations, in which the assistant needs to be almost as skilful as the operator himself; but with a few weeks' experience the average hospital intern will "play up" to his responsibilities and opportunities, and in nine-tenths of the operations will be perfectly competent to fill the position of first assistant.

What has been said regarding the assistant may be repeated to a certain extent in reference to the anesthetist. Does this service legitimately belong to the intern, or has the time come when the trained anesthetist is essential? Here we are met with the same questions which we had to confront in connection with the assistant to the operator. For if this work is to be taken away from our interns, where, they ask us, are they to acquire the necessary experience to enable them to administer an anesthetic skilfully in their private practice?

On the other hand, there are many conditions under which the anesthetist is called upon to exercise a skill equal almost to that of the operator himself. And with the more and more general use of different forms of anesthesia, both local and general, the administration of anesthetics is becoming generally recognized as a specialty, requiring special training and experience. For these reasons the expert anesthetist is likely to receive more general recognition in the future, and to be looked upon as essential to the proper organization of an operating room as the surgical nurse. In any large, general hospital there will always be enough minor operations to enable the intern to obtain such experience in the administration of anesthetics as he has a right to expect. And with the growing demand for the paid and specially trained anesthetist, the time will soon come, and in many hospitals it has already arrived, when the intern will be obliged to step

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DR. WILLIAM E. FAIRFIELD
Member of Executive Committee

The officers and members of the new Catholic Hospital Association, organized at Milwaukee, June 24, 25 and 26, have taken up the work of hospital efficiency under organized auspices most enthusiastically. Already plans are being made for a rousing meeting for 1916, and it is almost assured that the association will soon contain representatives from almost all of the 515 Catholic hospitals in the United States.

The above group includes all the officers of the association except Rev. Chas. B. Moulinier, S. J., president, whose photograph was published in the August number.

Additional papers read at the session are published in this issue and others will be published in October.

aside, as far as the anesthetic is concerned, in most of the operations, whether he wishes to do so or not.

In conclusion, allow me to offer the following summary of what I think should characterize a model operating room:

1. Its construction and equipment should be of the simplest nature, compatible with efficiency.

2. Its personnel should include only those absolutely necessary, all superfluous persons being eliminated.

3. Its atmosphere should be one of quiet and order. Loud and unnecessary talking, laughing and joking should be entirely ruled out. And in this connection permit me to be so bold as to make this suggestion: when you find your operating room in more or less excitement, with interns noisy and nurses confused and nervous, look to the surgeon.

Is he setting the example of calmness, dignity and earnestness? Or is he fault-finding, scolding and "fussy?" He is the autocrat of the operating room, and as a rule his own disposition and deportment will be reflected in the actions and feelings of those around him.

How many of you are there who cannot tell which of your staff surgeons is operating almost the moment you enter the surgery?

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## Efficiency and Progress in Hospitals[1]

BY HOWELL WRIGHT,
Superintendent Cleveland City Hospital, Cleveland, Ohio.

This paper has to do with efficiency and progress in municipal hospitals in this country. It lays emphasis chiefly upon hospitals owned and operated by the city and the county, individually or jointly, and supported by taxation, with mention of so-called private hospitals receiving fees or appropriations from the municipal or state government. It is not a "survey." Rather it seeks to point out on the one hand some of the many hopeful instances of progress, and on the other hand some of the causes for the serious failures in municipal ownership and operation of hospitals, with suggestions to eliminate such causes.

At the Detroit meeting of the American Hospital Association in 1912, Dr. Henry M. Hurd, in his President's address, spoke of the functions of a municipal hospital as follows:

"A stricter line of demarcation should limit the sphere of activity of the municipal and voluntary hospital. The municipal hospital should be reorganized whenever it is necessary, to afford proper care for all cases of chronic diseases among dependent patients and for cases which come under the police powers of the city—cases in which the right to restrain them in quarantine or to isolate them or to enforce hygienic requirements must be exercised."

Surely, Dr. Hurd or the American Hospital Association will not agree to limit the sphere of activity of all municipal hospitals to the care of chronic dependents and patients requiring quarantine or isolation, even though isolation be made to include the shamefully neglected acute cases of syphilis and gonorrhea. Unfortunately this is the limit of action now in too many cities, and too often the action, or inaction if you prefer, consists chiefly in running a boarding house or infirmary for chronic dependents. Dr. Hurd must have urged this line of demarcation and limited sphere of activity as the least any municipal hospital can do and do well for the sick and maintain its self-respect.

The interests of humanity demand a far greater sphere of activity for the modern municipal hospital. This paper assumes for its major premise, and I hope the American Hospital Association will subscribe to it, that a municipal hospital is an institution of organized society provided by a city to care for the sick. It is but a medical means to a social end, and this end—public welfare—must never be forgotten. The modern hospital has outgrown the narrow field of boarding and treating sick people, and the time has come when a proper city hospital can no longer passively receive the sick from the community at large without regard for the reason why they became sick, use them chiefly as material and often discharge them without the slightest interest in their convalescence and rehabilitation in wholesome living and working conditions. Hospitals more than any other social agency accumulate the evidence against the dangers to life in the community, dangers from contagion, from ways of living and from industry, and they must feel the responsibility to study this evidence and become leaders in the progress of prophylactic medicine. The idle convalescent is of no more value in a community than the bedridden and scarcely less expensive to support. It is not only charity and social service but also sound economy for a city to supervise convalescence; to make it such that the patient can return to his work the sooner. A city hospital of today must continue to give to a community scientific care for its sick, and must afford opportunities both for scientific investigation and for the education of physicians, nurses and orderlies. But, above all, it must, through its social service work and through cooperation with all other community social agencies, give a watchfulness over public health and results that are more days of life, work and happiness to its citizens. What, then, have the municipalities of this country to offer in owned and operated hospitals actually serving or planning to serve these broad purposes?

### SOME INSTANCES OF EFFICIENCY AND PROGRESS IN MUNICIPAL HOSPITALS

Considering that it is now the recognized duty of the city to care for the sick poor and to protect the public health by quarantine and isolation of contagious and infectious diseases, including syphilis and gonorrhea; considering the limited number of free beds in so-called private hospitals for the great numbers of sick poor needing scientific treatment and unable to pay for it in practically all American cities of any size; considering that it is the recognized duty of the state to afford opportunities for the education of physicians and nurses; and further considering that in many of our cities of over 100,000 population there are numerous acceptable medical schools, each eager to graduate well trained physicians, each eagerly seeking opportunities for the study of such forms of disease as municipal hospitals alone can and should offer; considering the lack of adequately trained nurses throughout the country; considering the needs for hospital social service, out-patient and dispensary work for the sick poor; in consideration of all these opportunities there is not nearly enough to offer, by and large, in the way of efficiency and progress in municipally owned and operated hospitals, in proportion to what believers in popular government have a right to, and do actually, expect from them.

Two splendid examples of long-continued efficiency and progress are recognized in the St. Paul City and County Hospital and the Boston City Hospital. The former owes its leading position to the personality of one man. The history of the St. Paul City and County Hospital is the life and history of its present Superintendent, Dr. Arthur B. Ancker. The Boston City Hospital, which has been generally considered the best in the United States, may fairly be said to owe its position to state legislation, which created its present form of organization and control and which materially lessened the opportunity for political in-

[1]Paper read before the Seventeenth Annual Conference of the American Hospital Association, San Francisco, June 22-25, 1915.

terference. But even in this hospital, I am informed, it has been possible for a new mayor's personal, family physician, an untrained hospital administrator, to be appointed as superintendent. The result is awaited with great interest, but judgment should be suspended and the new appointee given a chance to show his ability to keep the reputation of the hospital up to its recognized high standard. There are also many hopeful instances of more recent progress in cities large and small in widely scattered sections of the country. In 1913, at the American Medical Association meeting, the late Dr. Rupert Norton said:

"The new Bellevue Hospital in New York could in a few years become a noteworthy institution, but there are many conditions which stand in the way of its development along the best lines possible."

Those of us who are familiar with the report of Mr. Henry C. Wright on Bellevue and Allied Hospitals believe that he has pointed out many of these hindrances, and are wondering what New York is going to do about it. No one would question the statement that Mr. Wright's report and recommendations are indications of efficiency and progress. When any municipality questions the efficiency of its ownership and operation of hospitals it is a hopeful sign. It is reported that some of his excellent recommendations have been and are being carried out. But we are waiting to see what is to be done about the recommendation to reorganize the professional work of Bellevue and Allied Hospitals and to place the control of all the municipal hospitals in that city under one head. Further efficiency and progress in New York hospitals based on such a progressive investigation and report will be an inspiration to other cities in this country.

Municipal ownership and operation of hospitals in St. Louis has received greater momentum in the new form of city government, which became effective August, 1914. The City Hospital, which cared for 17,000 new patients in 1914, has reorganized its professional work. It is affiliated with Washington University and with St. Louis University, and two sections of the visiting staff from these two medical schools represent the teaching force of the hospital, while there is a third section representing the profession at large. The house staff is also being reorganized, dividing the interns between medical and surgical services and permitting them to select either one as a major with minor services in the other branches of medicine. A three years course for nurses, effective on January 1, was inaugurated, and a new curriculum adopted which embraces every phase of nursing education. It is believed that this reorganization will not only provide the highest standard of medical care for the sick, but will enable the hospital to fulfil satisfactorily its obligation toward the problems of medical and nursing education. Definite plans are being made to increase its laboratory facilities, but most important of all to develop its relations to the community through a social service department.

There are many other hopeful instances of progress along broad lines, including the Denver City and County Hospital, the Richmond (Va.) City Hospital, the Los Angeles County and the San Francisco City and County Hospitals. But I wish to speak at greater length of one, namely, Cleveland City Hospital. While I am connected with it I can safely speak at length of its recent development, because it began before my connection with the hospital and is due to the efforts of Dr. Harris R. Cooley, the present Director of Public Welfare, who separated the infirmary from the hospital, and to the energy and personality of our present mayor. It is a typical example of what can be accomplished in a short time in any city by the united efforts of two strong forces, namely, the city administration and a united, representative group of the medical profession.

In the fall of 1913 it was considered necessary to reorganize the professional work of the hospital. It seemed an opportune time to do so for several reasons. The first units of a $3,000,000 hospital were under construction. The old short-term, divided visiting staff service was becoming less effective. Two of the medical schools providing part of the service were gradually going out of existence, and there was a growing belief throughout the community that the hospital was not serving the full purposes for which it was intended. Accordingly a plan of affiliation with Western Reserve Medical School was worked out, and this became effective the first of February, 1914. It provides for the nomination of the entire hospital visiting staff by the trustees of Western Reserve University and appointment by the City Department of Public Welfare. All of the professional work of the hospital is centered in two divisions, medical and surgical, each in charge of a division chief. Under each division there are grouped the proper departments, each in charge of a department head. The division chiefs and the department heads are on duty the entire year. This plan has many advantages. It places the responsibility for the professional care of patients. It insures working efficiency and cooperation among departments. It provides a continuous service, which in turn makes possible definite plans and policies in the treatment of patients and uniformity in the teaching of house officers, in the training of nurses and in the keeping of charts and records. The full value of a teaching staff has been recognized, but at the same time the city, upon the nomination of the University trustees, has appointed physicians and surgeons on the staff, who have no University connection. The entire visiting staff comprises thirty-eight persons, and of this number twelve have no connection whatever with the University. The interests of the hospital demand that full responsibility for professional care be centered in the division chiefs, allowing teachers and independents to be on service throughout the year under the direction of the division chiefs.

The house staff has also been reorganized, the rotating service shortened and improved, and paid resident physicians and surgeons provided. Students are taught in the clinics and laboratories, and there is a regular service for clinical clerks in the ward laboratories.

The school for nurses has been thoroughly reorganized. Adequate salaries have been provided, making it possible to secure a high-grade superintendent of nurses, an assistant, an instructor of probationers and a trained teacher to give instruction in theoretical and practical nursing. Paid head nurses have been provided for every division of the hospital. The number of pupil nurses has been raised from 75 to 110, and better facilities in the way of demonstration and class rooms have also been provided. It is planned to raise the educational requirements for admission October 1, 1915, to a full high-school education or its equivalent, and to put the nursing work on an eight-hour-day basis. While the hospital provides opportunity for nursing work in the medical and surgical wards in obstetrics, pediatrics, mental cases, contagious diseases and in tuberculosis, definite plans are under way for an exchange with certain private hospitals to give our nurses opportunity to nurse private patients.

The laboratory facilities have been greatly improved. A central laboratory, together with a new autopsy room and morgue, has been established in a brick building centrally located and originally used as a contagious hospital. In ad-

dition, we now have eight small, compact ward laboratories in the different divisions of the hospital, for ordinary routine procedures. The University has also provided an electrocardiographic laboratory for the diagnosis and study of cardiac cases. All of these modern laboratory facilities are affording excellent opportunities for diagnosis and for scientific treatment of the sick. They are a substantial basis for possible future development.

The first units of the proposed $3,000,000 group have been occupied, namely, the administration and the service buildings, the nurses' home, the laundry and the stable, while the power plant will be completed on the first of September. As the contract calls for the completion of the hospital without decreasing the bed capacity, it was necessary to build these units first. Their occupation has vacated space for beds in the old hospital buildings, consequently the capacity of the hospital has been increased from 500 to 650, and with the occupation of the new Venereal Hospital it will be further increased to 800 this year. From now on every cent appropriated can be utilized for new hospital beds and equipment, and it is a part of the plan to build pavilions as required each year, anticipating the completion of the hospital group by 1920.

Mayor Baker is unwilling to endorse a narrow sphere of activity for Cleveland's City Hospital. He believes that patients must be treated in the institution with regard for the reason why they became sick, and that it is the duty of the hospital to supervise their convalescence and return them to wholesome living and working conditions. In other words, he believes that a city hospital must exert a watchfulness over public health and through its own social service department and through cooperation with all public health agencies produce results that are more days of life and work and happiness to citizens of the community. Consequently greater emphasis has been laid upon developing the social service department of the hospital. With a limited number of workers and a limited amount of money it has not been possible to serve all the purposes for which this department is intended. However, some splendid results have come from following up our discharged patients through cooperation with such agencies as public health nurses, the Babies' Dispensary, the Humane Society, the Associated Charities and the dispensary at Lakeside Hospital.

There has been comparatively little opportunity to supervise convalescence, even though sadly needed, because the city has been obliged to economize. As in other municipal institutions, it has been necessary to use beds needed for acute cases for convalescent patients. The city has an opportunity to develop excellent accommodations for convalescents on its great Warrensville Farm, and every effort is being made to secure such accommodations at the earliest possible moment. Indeed, it should be considered as a part of the plan to economize, for it now costs us $1.50 per day to care for convalescents in our hospital, while they might be cared for at 50 cents a day at the Warrensville Farm in small, convenient cottages, and restored to their homes and work the sooner. All of the mental patients sent to us for observation should be sent to the Warrensville Farm, where they may have opportunities for work and recreation and a chance to forget their troubles. As our accommodations for convalescents develop the term "convalescent" can be made more and more elastic. In time it would include a patient who has been operated upon for appendicitis and could not go back to his regular work for two or three weeks but could could go to Warrensville in a week; a maternity case that ought not to go home for three weeks but could go to Warrensville on the ninth or tenth day; and patients with communicable diseases could go to isolation wards at Warrensville as soon as the fever period is over. Children suffering from nephritis and certain diseases of childhood that mean months or years for recovery, if they recover at all, and from chronic bone diseases of childhood, should be included eventually. No municipal hospital service is on a high plane of efficiency unless it includes provision for the scientific supervision of convalescence, and Mayor Baker means that Cleveland shall render such service at the earliest possible moment.

There will be still further opportunity for social service when our new 150-bed department for acute cases of syphilis and gonorrhea is opened this year. This department has been made possible by the remodeling of our old Nurses' Home Building at a very small cost. It is in line with the most advanced principles advocated for the care of such cases and in harmony with the newer and broader ideas of public health work.

Brief mention must be made of that group of hospitals in this country of a more or less private nature receiving fees, contributions or appropriations from the city or the state. Such hospitals are found in New York, Philadelphia, Baltimore, Pittsburgh, Detroit, Buffalo and many other cities. One hospital of this type, however, which ought to be mentioned in particular is the New Orleans Charity Hospital. It is a 1,000-bed hospital, affiliated with Tulane University Medical School, and its present superintendent, Dr. C. G. Wilkins, is responsible for its recent splendid progress along modern lines in the face of many difficulties. Much has been done to put the physical properties in better condition. Various changes have been made, placing the hospital in a far better position to meet its obligations toward the problems of medical and nursing education, and a social service department has just been inaugurated.

There are other hopeful signs of progress in municipal hospitals, but in a thirty-minute paper it is possible to touch only the high spots. The material that I have gathered within the last two years and my own personal experience during that time lead me to believe that there are certain definite preventable causes for serious failures in municipal ownership and operation of hospitals in the United States.

### SOME CAUSES FOR SERIOUS FAILURES IN MUNICIPAL OWNERSHIP AND OPERATION OF HOSPITALS IN THE UNITED STATES, WITH SUGGESTIONS AIMING TO ELIMINATE SUCH CAUSES

One great cause for most of the serious failures in municipal ownership and operation of hospitals is the failure of two important factors to get together, namely, the city hall, containing the administration elected by the people, and the medical school, if there is one, or some medical society representing the medical profession. Each represents powerful constituents. Each wields a great influence over public opinion. And the medical profession thus represented in any given city in the United States, whenever a municipal hospital has been planned or reorganized, has it in its hands to make or mar that institution. There are few cities in which the proper city officials have not turned to the medical profession for guidance, assistance and instruction whenever they have been concerned with a problem of caring for the sick, and particularly the hospital problem. Too often the failure of the physicians to lend wise assistance has been due solely to their inability to forget their own professional political difficulties. And when conscientious city officials have worked out a constructive plan jointly with intelligent elements of the medical profession in any given community for the

institutional care of the sick, upon what occasion has not some misguided faction of the medical profession immediately, before waiting to give the proposed plan a trial, passed resolutions condemning these officials for playing politics, or other resolutions complaining that they personally are going to be deprived of something to which they think themselves entitled by "divine right of the profession."

In the construction of municipal hospitals responsible city officials have repeatedly failed to select competent architects or to associate with them practical hospital experts to draw the plans, with the result that many municipal hospitals, as far as construction is concerned, have failed absolutely to serve the purposes for which they were intended. Hospital construction is a science, and the ordinary run of city architects, or local architects for that matter, know less about the construction of modern hospitals than the average board of health in a New England country town.

The failure of some American cities to have proper municipal hospitals, or to have any at all, is often due to the mistaken notion of city officials that the cheapest and best way to care for the sick poor is for the municipality to pay somebody else to do it, and the medical profession has not been slow in some cities to advise and approve of this plan, generally known as the subsidy system. In some states subsidies to private hospitals are paid by the state government, in others by the city. A careful study of this plan will not convince thoughtful citizens that it is either the best, or in the end the cheapest, method either as a temporary expedient or a permanent policy. The city of New York in 1914, through the Department of Public Charities, cared for 48,244 patients in 5,793 beds. In private hospitals there were 40,480 patients treated in the same year at the expense of the department. Anyone familiar with the troubles of the Department of Public Charities in New York in trying to control payments to private institutions might incidentally find an additional reason for the high cost of municipal government. People familiar with the facts in the state of Pennsylvania will not question the statement that the subsidy system in that state has been the cause of wholesale political scandal and extravagance, even though a remarkable chain of hospitals has been developed throughout the state. It is generally known that the "mouths of some of the most public spirited citizens in the state are absolutely sealed, and any action on their part against the most flagrant offenses of a corrupt political organization is estopped by this system of grants of state money to private institutions." Subsidies to hospitals may be necessary under strict regulation for a long time to come in some of our older and larger cities, but should be consistently avoided in newer and smaller cities as against sound public business policy in caring for the sick.

In some cities, as in Buffalo, arrangements are made by the city with private hospitals for the care of city cases at low rates. Often the amount paid is only half of the expense, and frequently the comment of the private hospital is, "It is better than receiving nothing." Subsidy agreements are often the basis of much misunderstanding and result in greater cost to the city, especially when the burden is placed upon the city of proving that patients received and cared for by the private hospital are not legal charges upon the city. Under such arrangements the private hospital makes less effort to fix responsibility for payment upon the patient himself or his relatives, because it knows it will get something from the city. Under the lump sum subsidy plan interesting situations arise in some of the smaller cities. In Toledo, Ohio, the superintendent of one of the private hospitals says, "We, with two other hospitals, bear the burden of the care of city patients at a great loss in dollars and cents, because of the small appropriation allowed us, and it is only a question of time when the municipality will be compelled either to appropriate sufficient funds for private hospitals to care for their patients without a deficit or to maintain a municipal institution." On the other hand it is reported in other circles that there is decided opposition among the controlling forces of the private hospitals to the building of a municipal hospital. The city of Dayton pays $56,000 annually to two private hospitals, divided equally between them, although the city absolutely has no voice in the administration of either hospital. On the other hand the health department has been anxious to establish a city hospital for the treatment of contagious and preventable diseases, but reports that "both of these institutions have fought us so as to defeat our plans," and further states that department heads never had any cooperation from the institutions until recently; that one of them grudgingly takes measles and diphtheria cases at the request of the health department and the other one grudgingly takes whatever infectious cases are sent; and that efforts to use these two institutions as educational centers have been defeated by cliques in the medical profession.

The greatest hindrance and danger to efficiency and progress in municipal hospitals is found in the method or plan of administrative control. There are too few instances of the one plan of administrative control of municipal hospitals which will now more often insure long continued progress, and herein lies an additional reason for the high cost of municipal government. There are too many instances of city hospitals being a part of the changing city administration. In cases where the superintendent is appointed by the mayor or by some other executive of the administration whose existence in official political life is dependent upon the vote of the people, opportunity for long continued progress and efficiency rarely exists. In such cases rotation of office means rotation of hospital superintendents, with frequent change in essential hospital policies, and with the result that our city hospitals and the sick entrusted to their care are placed in the hands of a series of perfectly green and inexperienced officials. To repeat the process of placing the active authority and direct control of city hospitals in the hands of such officials, and to repeat the expensive and tedious process of developing them, whenever they can be developed, to the point of grasping even the essentials of modern hospital management, is to close our eyes to the recent rapid progress in the work of hospitals for a community and to make it forever impossible for many of our municipally owned and operated hospitals to advance beyond an elementary and experimental condition. And I know full well from personal experience what it costs a city and all concerned in time and in money for perfectly green and inexperienced officials to undertake the problems involved in managing a municipal hospital. While a combination of an intelligent executive with the best element of the medical profession in a given community may result for a time in substantial progress, the immediate hope of the municipal hospital in this country lies in placing the active administrative control in the hands of a nonpartisan board of trustees properly connected with the administrative and legislative branches of the municipal government so as to prevent it from becoming isolated from other public welfare activities. No other plan will now assure the average American city of the benefits of the accumulated experience and judgment it has pur-

chased and will purchase from time to time at great cost, and make possible continued efficiency and progress of its hospital and the service it renders. However, when public office becomes a public trust in the average American city; when the average mayor and his cabinet in the average American city are, by reason of education, training and experience, public welfare workers with high business-like ideals for the development of the city's welfare activities, and are continually elected by the people on this basis, then nonpartisan boards of trustees for municipal hospitals will not be necessary, because every change in a city administration will not necessarily result in change of competent hospital officials and essential hospital policies. This is the ideal for which we must work. And it will come about only as citizens interest themselves in their municipal government as a whole. Then efficiency and progress in municipal government will be synonymous with efficiency and progress in municipal hospitals.

Hospital administration is a business and a science. While there are both competent professional and lay superintendents, there has been a tendency in the past to select either untrained doctors or laymen as hospital managers with results not always satisfactory. And again there have been too many instances of failure of city administrations to place the authority and responsibility required in the hands of the hospital superintendent to promote efficiency and economy. It is a fixed principle in the modern hospital that the superintendent must have definite rights and responsibilities, including direct responsibility to some one constituted authority for the general management of the hospital; full authority to appoint and remove all employees of the hospital, including assistant superintendents, resident physicians, the head of the training school and all other departments and their subordinates. All of these officers and heads of departments must be wholly and directly responsible to the superintendent. He and his assistants must have absolute control of all admissions to the hospital and the final discharges. In other words, as the manager of a big business corporation, he must be given authority consistent with the importance of the position he holds, and it must be so understood by all concerned if he is expected to produce results. Yet states and municipalities continue to increase the high cost of municipal government in the administration of hospitals by passing laws and making charters with provisions which unnecessarily divide authority and responsibility among too many officers. Too often the laws or ordinances governing the administration of hospitals make the position of a municipal hospital superintendent essentially that of chief clerk. All of the authority he should have for the general management of the hospital is often placed in the hands of some officer in the city hall removed from the seat of operation. In Ohio, under the old Payne law, all the authority for the management of municipal hospitals is vested in the director of public safety. Regardless of civil service he can make the superintendent what he wants him to be or make him resign. And as administrations change director, superintendent and essential hospital policies change. Cincinnati's great new hospital is operated under this law. On the other hand the St. Paul City and County Hospital, with almost no changes in competent hospital officials and essential policies, has continued to give high-grade service to the community and is now doing so at a per capita cost of $1.25 per day.

In the future city authorities must learn to recognize that they cannot hold their hospital administrator responsible for scientific management unless they give him certain additional authority. They cannot hold him responsible for economy, for scientific saving, for the elimination of waste, unless they give him some voice in the purchasing of hospital supplies and equipment. They must learn to recognize that they are contributing further to the high cost of municipal government when they create a central purchasing department, which is sound business in general, but equip it with inexperienced, low-salaried purchasing agents, give them full authority to purchase medical and surgical supplies, instruments and apparatus; to take their own time about it and to make the hospital take any kind, any make or any grade regardless of experience and specifications. In some cities it would take the services of a $5,000-a-year specification clerk to insure the hospital's getting what is ordered and needed. The Providence City Hospital seems to have a satisfactory arrangement so far as the purchasing of supplies is concerned. There are only three contracts made by the city under which the hospital comes, namely, contracts for coal, printing and ice. In the purchasing of other hospital supplies and equipment the superintendent has a voice, as he must if he is expected to promote economy.

Another reason for failure of many municipal hospitals to serve the purposes for which they are intended, and incidentally another expensive contribution to the high cost of municipal government, is their almost complete failure to provide accommodation for convalescent patients and to supervise their convalescence. This has been quite general in the existing hospitals throughout the United States, although there are hopeful signs of improvement in the larger cities, such as New York, Chicago, Philadelphia and Cleveland. In the smaller cities even the hospitals that have progressed along other lines have been slow to recognize this responsibility. Such cities as St. Paul, Kansas City, Mo., St. Louis, Denver, Memphis, Cincinnati, Louisville and Milwaukee have done comparatively little through their municipal hospitals to place convalescence on a scientific basis. Let any city study carefully its municipal hospital accommodations for acute cases, the cost of keeping them, the opportunities to provide accommodations for their convalescence on the hospital land, on the infirmary, almshouse, or other land the city owns or can purchase; the comparative cost of keeping them in special quarters; and it will soon find that it will cost less and benefit the patients more to supervise their convalescence on a scientific basis. Let some intelligent group of taxpayers get this thoroughly in mind and they will gently remind some backward city administration that they prefer to support the poor as convalescents at 50 cents per day than intermittently as acute cases at $1.50. And some taxpayers are beginning to inquire as to how their money is spent for the care of the sick.

Extended inquiry throughout the United States warrants the statement that civil service as generally applied has contributed little toward scientific management or to the advancement of medical and nursing education in municipal hospitals. There is little objection to the selection of the chief hospital administrator through high-grade, competitive civil service, but when such an official is so chosen it is generally conceded that it is not only a hindrance to efficiency and progress, but contributory to the high cost of municipal government to delegate his authority in any degree whatever to a supervisory body with control over the conduct and management of the hospital in the form of what some enthusiasts call an "employment bureau." In the modern hospital world it is generally recognized that managing a hospital is largely the science of mixing many competent personalities. The success or failure of a hospital manager is often determined by his

ability to mix and fit such personalities. How can this all-important human element receive proper consideration at the hands of any sort of "employment bureau"?

It is admitted by some enthusiastic advocates of civil service that it is unwise, unnecessary and expensive to hold civil service examinations of any kind for hospital nurses or physicians, who must be registered by the state before they can perform the professional duties for which they have been trained. In some cities it is found that civil service has not been and probably will not be of any great assistance in the selection of that great group of employees commonly called "hospital helpers." And in the selection of the two remaining classes of hospital employees, mechanics and clerical assistants, civil service is declared in many cities to be of doubtful value. Obviously in consideration of such facts there is but one promising line of action. Select high-grade administrators, select them through competitive civil service examination if you must, and give them an absolutely free hand in appointments if greater efficiency and progress is expected in municipal hospitals.

Finally, the medical profession and municipal hospitals must be brought together more closely, primarily in the interests of the sick. One cannot render the highest service to the community and the public welfare without the other. The best element of the medical profession in every city must not only understand that the municipal hospital must provide scientific care for the sick and must fulfil its obligation toward the modern problems of medical and nursing education, but also that municipalities will not build municipal hospitals just to give every doctor in the community, regardless of his ability and training, an opportunity to treat the sick. On the other hand municipalities must now through nonpartisan controlling boards take their hospitals out of politics and keep them out of politics and cooperate with medical schools and medical societies in picking the best men for the hospital staff, and provide them with modern facilities with which to treat the sick and to study disease in return for services rendered. A new era is dawning in municipal ownership and operation of hospitals in this country, and such cooperation cannot fail during the next ten years to bring wonderful progress.

## Significance of Hospital Rating[1]

BY F. E. CHAPMAN,
Superintendent City Hospital, St. Louis, Mo.

After inspecting a modern hospital plant it would require rather a vivid imagination to draw a picture in one's mind of the equipment of hospitals in earlier days. History tells us that the first hospitals, with one or two exceptions, were constructed for the care of the insane. They had little, if any, efficiency, except restraining the patient, if that may be termed efficiency. No attempt was made to treat patients, the sole object apparently being to provide a place where they could be isolated from the remainder of the community. Later on we see the origin of a few general hospitals for the care of the sick, and also a few maternity hospitals. The latter class were short-lived, owing largely to the high mortality from sepsis. The former, at best, were little better than medical lodging houses, their administrators knowing very little of asepsis, their staffs being ill-versed in the handling of disease in institutions.

It is not necessary to go very far back in history to learn of the troubles of our predecessors. The history of some of our best American hospitals tells us of the presence of hospital gangrene in practically every open wound, and the frequent death of patients due to infection transmitted from other cases in the hospital. It was not until Pasteur gave us his discoveries regarding bacteriologic life, thereby enabling us to combat these infections, that hospitals were able in any measure to perform successfully their proper functions.

As in all new departures, it was not an easy matter to prevail upon patients to go to a hospital when they were ill. This task was by no means made easier by the reports coming from those who had accepted the advice of their physicians. As a result, hospitals were looked upon with much disfavor. With the advent of modern surgery, and a realization on the part of the surgeons that proper work could only be done in an institution of the right sort, it became incumbent upon the medical profession to educate the public to this way of thinking. Those who did avail themselves of the facilities of hospitals under the new regime were quick to realize the resultant advantages, and this fact, together with the increasingly rapid strides in the development of hospitals, slowly but surely dispelled the odium against hospitals and converted a sense of horror into a sense of confidence. This acceptance of the hospital as an established institution is by no means unanimous as yet, but there is no question that hospitals are looked upon with better favor every day by all classes of people.

This change in feeling towards institutions for the sick is responsible for the vast strides made in the hospital field in a comparatively short number of years. It has resulted in practically a complete revolution in the care of the sick. Realizing the untold advantages of having patients under such control as to insure a strict adherence to instructions, the medical profession have aided in every possible way the development of this better feeling. The resultant demands for hospital facilities have meant the investment of large sums of money in hospital plants. These large investments are demanding the most efficient administration possible, and consequently we see the creation of the hospital specialist in the varied industries associated with the work.

Hospitals, good, bad, and indifferent, have sprung up overnight, as it were, and in some communities this development is even in excess of actual present needs. We see the creation of the institution holding the enviable position of enjoying a large endowment. We see also the creation of the institution not so fortunate, but striving with every effort to perform its functions in the best possible manner.

Unfortunately, we see also the creation of an institution with an administrative body which has not the qualifications to establish for itself a code of morals of unquestionable character. Such administrators, apparently, have never realized the true object of the institution they govern. They do not seem to differentiate between a commercial investment and the expenditure of money in the construction of a hospital. No one would advocate the improper application of funds, but the primary object, apparently, of such a board is returning a dividend on the investment, with secondary consideration only to the correct object of such an investment; i. e., the care of the sick. Such an institution, founded on a purely commercial basis, cannot represent the best there is in this work, and it is undoubtedly a menace to the community in which it exists. The people who patronize our institutions are not in a position to judge. Lay judgment is based, to a large extent, upon externals. To the general public, a hospital means a place for the care of the sick. It has no means of knowing the standards of the place to which it entrusts itself, and it is the patent necessity of estab-

[1]Paper read before the First Annual Convention of the Catholic Hospital Association, Milwaukee, June 24-26, 1915.

lishing such standards that brings us face to face with the problem of rating hospitals on a basis of group classification.

Such a classification is neither a new departure nor one that is confined to this field alone. Similar endeavors have been made, and will continue to be made by practically every worthy organization in the medical world. Reference is made to the medical world only because of its close connection with this field. Attention is called to the efforts of the Council on Medical Education of the American Medical Association in the establishment of grades "A," "B" and "C" schools; to the efforts of the Association of American Medical Colleges in standardizing teaching methods, and also to the efforts of the American College of Surgeons in establishing a recognized minimum of qualifications for those who would be recognized as surgeons.

There is, as in all things, another side to this matter. The question will be asked: who is to exercise the exceptional judgment and expert knowledge of conditions necessary to establish a standard for different classes of institutions under all conditions? Seemingly invidious comparisons will be resented. There has been, and will continue to be, some opposition to any plan, due in part to a lack of understanding as to the ultimate aim, and also due to a lack of desire on the part of some institutions to be graded. The inelasticity of any method of grading is fully recognized, but the benefits to flow from even a partial standardization are so very patent as to warrant every effort to secure their adoption.

Notwithstanding the mildly unfavorable aspect of this question, the benefits to be derived from the adoption of such a plan would more than compensate the hospital world at large for the disadvantages accruing to the individual hospital. Its adoption would provide a stimulus to institutional endeavor; would afford a uniform method for the collection of hospital data; would afford vastly additional teaching facilities; would enlighten not only the professional, but also the lay members of the community, and last, but not least, would impress upon all the three fundamental functions of the hospital; i. e., the cure of disease; the study of disease; and teaching the principles of disease; and by that impression and the consequent striving to maintain a standard established, increase the efficiency of each individual hospital, which is the ultimate aim of all.

Admitting as a fact the shortcomings of any basis of rating, but recognizing the consequent benefits, it is now necessary to establish the fundamental elements on which such a rating should be based. In the final analysis, the fundamental requirements group themselves under the following heads:

1. Medical staff.
2. Equipment of institution.
3. Personnel of staff other than medical.
4. Attitude of administrators.

There is no gainsaying the statement that the standing of the institution in the hospital world is reflected absolutely in the standing of the personnel of the medical staff. The administration of the institution may have unlimited energy, unlimited funds, high ideals, and all of the attributes of a high-grade hospital, but if they have not the hearty cooperation of a medical staff of equally high attributes, they will labor under a handicap that is practically insurmountable. It is a well recognized fact that the best results can only be obtained in any organization by the close unification of all of the working parts of that organization. This coordination should unquestionably prevail in the medical staff of the hospital just as much as in any of the other departments. Such unification, experience has taught us, cannot obtain in an open staff organization. There is no question but that the most scientific results can be obtained by a closed staff organization, but this is not always practical in its strictest sense. I do not wish to be placed in the position of advocating an institution establishing itself as a medical aristocracy. It is, however, an evident fact that an institution desiring to do the best work possible can only admit on its staff such men in the community as are recognized to be men of unquestionable character, sincerity, and ability. You would not hesitate to eliminate inefficient members of any other part of your working organization. The same striving towards efficiency should prevail with your staff.

The medical staff of an institution should be governed the same as any other group of workers, both from a medical and administrative point of view. There should be a chief of staff, and, if the size of the institution warrants, chiefs of service for the various divisions of medicine, these chiefs to comprise a council for the establishment of routine practices.

May I call attention to some of the benefits to be derived from such an organization? With such a council the nursing routine would be much simplified. Given a certain condition, this council could establish what should be done, thereby fostering a routine which in no way would interfere with securing the best of treatment for any particular case, but which would vastly lighten the burden of the nurse in carrying out the instructions of the physician, in that she would know in advance the routine established for that procedure. From an administrative standpoint, the burden would also be lightened. All of you have requests from Dr. A and Dr. B *ad infinitum*, which requests may all have been conscientiously made, but which, if carried out, would mean a duplication of equipment, or an expense that could not be borne, to say nothing of the possibility of expending money for some one commodity that would not do as much general good as something else. The avoidance of such complexities is a burden that should be partially borne by such a council. All administrators having the good of their institution at heart stand ready and willing to secure everything within their power to assist the medical staff in their work, but I for one want some assurance, both that the particular item requested is not a personal hobby of the member of the staff making the request, and also that it will not be used by him for a certain period of time and then discarded.

Now, as to the second function of the institution. How can an open organization even approximately accomplish the results in the study of disease that can be accomplished by an organization such as is outlined above? The compilation of medical statistics at best is a complicated procedure, and can only be successfully done by following a definite plan. No loosely organized body can establish such a plan and adhere to it.

The hospital in its infancy had very little, if any, equipment of any character. In view of the fact that the surgeons were the first to demand the services of an institution for the care of their patients under proper conditions, and assisted, in all probability, more than the other branches of medicine in creating a demand for hospitals, their needs were naturally looked after, not because of any desire to discriminate, but because of the fact that surgical cases make up the largest proportion of the hospital patients. This fact alone is responsible for the one-sided equipping of some hospitals. Even in this day you will see plans of hospitals that apparently are constructed

around an operating suite. This idea is ingrained so deeply that about the first point of interest most inspecting parties desire to see is the operating room, seemingly not interested in the other departments of the institution. This one-sided distribution of facilities is not fair to the balance of your staff. Your internist is entitled to the same facilities to assist him in his diagnosis and treatment as the surgeon. You cannot expect first-class, scientific work if you do not furnish the facilities to work with. The surgeon is entitled to everything that he has, and as much more as you can give him, but do not neglect the balance of your staff. A scientific dietary, good pathological and bacteriological facilities, the essential, at least, of hydrotherapeutic facilities, are just as necessary. With the advancement in radiographic apparatus no up-to-date institution should be content to be equipped for nothing but the taking of plates. There should also be facilities for screen and treatment work. The argument will be advanced that all of these items cost money, that money is a scarce commodity in a hospital. Unfortunately, we must consider the financial end of these matters, but also from a financial standpoint you cannot afford to have the medical profession of your community say that because of lack of facilities they are unable to do first-class work in your institution. Further, it is surprising how much can be done with limited funds. You need not establish an elaborate outfit in any of these branches. Exceptionally good work can be done with modest equipment, but modest though it be, the equipment should be installed with a view to enlarging the department as the demands of the institution warrant. Efficiency in any field of endeavor is based on end results. Your institution should not be content to discharge patients and then absolve itself of any further responsibility. A follow-up system is not always practical, nor is it always necessary. If there is any value in executing the instructions of the physician as to the after-care of the patient, then you must have your work so organized that you can follow up the patients and endeavor, at least, to persuade them to return for further treatment or instruction. Unless this can be done, the institution is not one hundred percent efficient. The statement has been made by a recognized authority on these lines that there are few institutions in the country fifty percent efficient because of this very fact.

Now, as to the personnel of your corps as a whole. Mention has previously been made as to the character of medical men who should be on the staff. The institution should go still further than this. It should accept more responsibility for the work of those men. The time is not far distant when it will be incumbent upon institutions to publish not only the financial, but the vital statistics in their annual reports. When that time comes, and the attention of the world at large is directed to the real work of the hospital, institutions will be obliged to assume the responsibility of their staffs, and consequently will be loath to take upon themselves the responsibility of the work of men who should have no claim upon the services of a first-class hospital. The best of equipment in every department stands for naught if proper direction cannot be furnished for the work. It is not always possible to have a salaried head for every department of the institution, but if you have members who are willing to devote their time and energy to the clinical side of the institution, you undoubtedly can secure the same character of services from laboratory workers. Establish your laboratories on a basis of unquestioned reliability. Do not be content with a makeshift arrangement. Place your diet kitchens in the hands of a person fully equipped to do the work. Make your medical staff know that when they order a certain diet for a patient, that diet, exactly as ordered, will be furnished. Provide such facilities as will insure the proper interpretation of your radiographic work. Organize your training school, not with an idea of getting cheap nursing care, but with the idea both of obtaining the best possible care for your patients and of preparing properly equipped young women to enter this field in life. Offer a curriculum that will attract only those who are earnestly interested in the work, and who are desirous of obtaining only the most efficient of training, and then insure their receiving that training by placing in charge of the department one who is qualified so to educate them. Offer your interns such facilities that you will attract the best of men from the best of schools, not those who could not make a place in another hospital. And, above all, inculcate an *esprit de corps*. Compel, by your actions, everyone in the institution to realize that your institution stands for everything that is good at all times and under all conditions.

These are the fundamentals of a basis for hospital rating. No hard and fast rule can be made; no absolute standard for all can be established. The highest standard of efficiency is all that is aimed at, and this aim can undoubtedly be reached, not only from a scientific viewpoint, but from a viewpoint of dollars and cents, by the adoption of a standard of what is right and wrong and what is good and bad by all of us.

After all is said and done, the full burden of an ideal institution rests with you administrators. After you have chosen your medical staff of the highest order obtainable, after you have furnished them with facilities for first-class work, it is up to you, not once in a while, but every day in the year, to keep burning brightly that flame of zeal and persistent devotion to the high ideals of the institution, which are so necessary in order to carry out the work. Know, yourself, that your institution is capable and will do the best work that it is possible to do within the limits of your facilities; bring those facilities up to the highest possible standard (and spare no efforts to do so); and then, by your example, make each and every one of the personnel of that institution, from the highest to the lowest, realize this every minute of the day. Then, and not until then, will you realize the significance of hospital rating.

## Interdependence Between Hospital and Outside Work[1]

BY R. M. BRADLEY,
Trustee Thomas Thompson Trust, Boston, Mass.

There has been growing in the public mind a stronger consciousness that the hospital cannot be an isolated unit working independently in order to perform a certain function of usefulness, namely, the care and cure of those who come to its doors.

It has become more and more evident that the final test of a hospital's efficiency is not only how it handles the cases which it receives into its care, but what impression it makes directly or indirectly upon the *whole* sum of sickness and suffering in its community. From that point of view it can, under certain circumstances, be a total failure as to net results, while at the same time it is reasonably efficient in the details of its immediate work.

Just as we need a word to express the idea that a real hospital is not a building, but rather the work of a devoted body of men and women who happen to be occupying a certain edifice, so we need a word to express the gen-

[1]Paper read before the Conference of the American Hospital Association, San Francisco, June 22-25, 1915.

eral community work in preventing and handling sickness, in which work the hospital has its place. It is little or no credit to a community if a small part of its sick are well cared for and the balance grossly neglected, and the hospital must fill efficiently its proper place in a good general system covering the whole ground. With this more extended work the hospital work is interrelated in countless ways and the study of making those relations effective is only beginning.

The absorbing nature of hospital work produces with average human nature the defect of making the hospital too self-centered. This is something so natural to a hospital management that the intelligent hospital head must constantly fight against it.

In this conflict it is possible that you may be helped somewhat as well as irritated by what I may call the stupid layman's point of view, a point of view so detached from your own that in its very ignorance of the many things that you know to be of vital importance it may possibly cause you to see other aspects of the situation.

A canvass was recently made of two districts in New York City to ascertain, among other things, what impression the hospital work was making in certain classes of serious cases.

This canvass showed that out of a population of 17,000 86.6 percent of the cases of sickness were cared for at home and not in the hospital, and that out of the deaths from typhoid and pneumonia 70 percent of the typhoid deaths occurred in the homes, and 85 percent of the pneumonia deaths were in the homes, showing that a very large number of serious cases were not treated by the hospitals.

The question instantly presenting itself from these figures is: by what system of selection did the hospitals receive some of these cases and by what system of selection did they not receive others? If, as seems probable, they missed cases that were in desperate need of their services, was it because they were filled by cases still more desperate, or if not, what was the cause? In other words, what was their relation to the whole problem of sickness and suffering, and what place, if any, did they hold in the comprehensive system for handling that problem, if such system existed?

Another canvass was recently made of all ascertainable cases of sickness in a certain group of districts in Central New York containing in all some ten thousand people. The circumstances of all ascertainable cases of sickness, some sixteen hundred in number, were gone into, so far as their conditions were ascertainable, in order to find, among other things, what was the proper number of beds to provide in that community. The number of beds to be prescribed was figured out with great care and elaborateness from the cases apparently needing hospital care, but when conditions came to be analyzed the problem ceased to be in any degree so simple.

Areas were found where the cesspools taking care of an abundant water supply were closely intermingled with the old family well; whose sparkling waters possessed a tang lacking in the more insipid beverage offered by a town water company. Other areas existed where a sloping village site offered a succession of vaults and wells with the vault given the preference as to altitude.

Our figures called for additional hospital accommodation for the abundant typhoid patients, but maturer thought suggested that a few well adjusted drain pipes would probably be a more radical and less expensive remedy for that particular ill.

Similar veins of thought were opened in all directions. Certain poor girls had no proper accommodations in their confinement and more hospital beds were figured out. But was not a permanent asylum for these feeble-minded and helpless victims, where they could be permanently cared for and protected, better than additional accommodations to enable them to burden the community with more offspring like themselves?

Many families had no fit dwellings to live in, much less to be sick or to die in. Was the remedy better housing or more hospital beds? Some of us were tempted to ask in our haste, "Is the hospital bed to be the place where all our other senses of social obligations shall slumber undisturbed until the day of judgment?"

Of course the answer to this problem is that the hospital provision must be an indeterminate quantity, tending to increase as we learn and teach the people the proper uses of the hospital; and tending to diminish as we learn to apply effective methods of preventing disease, and as we learn to abate those social conditions that deprive too many of our people of real homes in which to die or be born. It will tend to diminish also as we succeed in developing a comprehensive system of home care that will prevent our hospitals from being overloaded with cases that could be cared for properly in the home, or could convalesce there under care, thus making room for more urgent cases.

To put things more concretely, some time in the future we may have correspondence somewhat as follows:

"To the Secretary of the Wisdom Bank Foundation.

Dear Sir: I am directed in behalf of the Citizens' Improvement Association of Anyville to seek your advice upon the problem of additional hospital accommodations for our city. A large increase of our population is taking place, as a result of the prosperity and expansion of our industries, and a number of our leading and public spirited citizens have requested us to ascertain what additional hospital accommodations should be provided for a town of this size, promising to contribute to a properly planned plant. Would it be possible for you to make an expert investigation of the situation and give us your advice upon that point? Respectfully yours,

J. SMITH, Secretary."

The following answer results after due process:

"J. Smith, Secretary of Citizens' Improvement Association,
Anyville, State of Average.

Dear Sir: Pursuant to the request of your association, several agents of our foundation have made a careful survey of conditions in your town, the results of which we herewith furnish you in detail in the appended exhibits.

With reference to your question as to the number of beds which a town of the size of Anyville should have for the accommodation of hospital patients, we offer a schedule of a few special accommodations which we believe should at once be added to your present plants in order to accommodate a certain limited number of cases that cannot now safely be admitted to those institutions and are a danger to the community if left outside.

In addition to that we would advise you that by instituting an inexpensive system of home care for convalescents the capacity of your present accommodations could, in our judgment, be increased by about ten percent, and another fifteen percent of capacity could be added by giving the same home care to a class of patients who are sent to your hospitals, not because of the nature of their trouble but because of the difficulty of obtaining responsible and efficient care at home. This home care if properly organized through a health center could be furnished at a smaller cost and without an expensive plant. We regret to find that in addition to these cases there are other cases in your hospitals who are there simply because it is the easiest place to put them, regardless of the fact that there are numerous cases vitally needing the service of your institutions, of which cases the managements appear to be ignorant.

Although we believe that the use of your present plants can be made some thirty percent more efficient, present conditions in your city are such that some one hundred beds, if provided, could at once be filled with patients who

have not now suitable care in sickness. The plant to accommodate these beds would cost some two hundred thousand dollars and their maintenance would amount to a charge of about $70,000 per annum, irrespective of physicians' services.

We hesitate, however, to advise you to undergo this expense without going into the following considerations: A certain proportion of these cases are due to entirely preventable causes; a large part of your city still clings to vaults and wells and a steady supply of typhoid is the result; the condition of your milk supply is neglected and in addition to occasional milk epidemics, the children's ailments are very numerous. Your state offers no sufficient asylum accommodations for a certain class of feebleminded women, and the calls upon your maternity wards are therefore unnecessarily large. Your people are uninstructed in the matter of avoiding the spread of contagious diseases and the work of your health officers is consequently largely perfunctory and ineffective.

One of the largest sources of candidates for hospital beds is due to your industrial conditions. Your prospering manufacturers are developing methods of organization that dispense as far as possible with skilled and well paid labor and make use of continually larger quantities of labor willing to take low pay and to put up with extremely undesirable living conditions.

Some twenty-five percent of your population is already of the kind where the family occupy three rooms and take boarders. Your housing regulations are inadequate and their enforcement is a farce. Your operatives' quarter is squalid, neglected, unsafe and unsanitary, and this condition seems to be on the increase rather than otherwise. It is obvious that a tenant of the usual dwelling in your main operatives' quarter has no fit place for either illness, convalescence or childbirth. If your city intends to perpetuate these conditions the providing of some hundred additional beds as a beginning would seem the conventional thing to do, as a step in the way of palliation.

If, however, the reduction of these conditions should commend itself to you as more humane and more desirable, we recommend a more conservative programme. This would embrace at the outset, only the slight addition to your hospital plant above specified and its more efficient use. It would require first a campaign of health education among your people through preventive medicine physicians, health officers and school nurses.

It would entail the removal of unsanitary conditions and reform in the administration of the health laws. There would also be needed better building laws, the forbidding of room crowding and the construction of decent and sanitary quarters for your wage earning classes.

It would necessitate the building up of a well organized health center, which would have for its function the bringing together under a competent head for effective team play of the school nurses and the various kinds of nurses, graduate and non-graduate, who look after the sick. Such a center would act as a natural clearing house for service in sickness, being the first place of call in case of any illness. It would insure, so far as possible, that the cases requiring institutional care should receive it as soon as needed and that the institutions should be promptly relieved of those cases no longer needing their service. This health center should not be a charitable institution or it will not be generally used. It should be a place where the average citizen can go in sickness to obtain help in meeting his emergency needs, and can obtain the kind of help required, whether household help or nursing, at a fair price. He would expect to pay his bills for this service as for his other ordinary requirements. Where charitable funds are needed to pay for nursing or other service they could be provided, not by nurses but by proper administrators of charity. The average citizen, however, will be found not to need or desire charity, but to require some simple form of benefit insurance that will enable him to carry his family through those sickness emergencies which entail large and unexpected expenses irregularly distributed. He requires this kind of insurance just as he requires insurance for fires, accidents, or death and other emergencies. If he is not employed by a parasite industry that does not expect to support its employees, he can thus be kept from becoming a candidate for charity either in or out of the hospital. Also by this method your system can be given a sound financial basis for a full development, being supported by the classes who support themselves and the rest of the country.

Those of your citizens, however, who can afford it will still have ample opportunity to benefit the community by furnishing funds for better plants; funds for research and development work and funds for better salaries and retirement funds for the now underpaid workers in the field of hospital and nursing work.

We are able in this letter to give only a bare outline of the course of action and system recommended, but we commend to you further study of its practical application elsewhere before a large amount of your resources are devoted to purposes that promise palliation rather than remedy.

Very truly yours,

H. F. JOHNSON, Secretary."

This is a very inadequate attempt to indicate the bearing of the larger problems involving the hospital. The question of what effect your hospitals are having on the whole problem is going to become more and more insistent and you have got to do your part in answering it. It means that more of you have got to be able to answer questions as to what happens to the cases that you do *not* get, and as to why you have so many cases put upon you that are not the ones most in need of hospital service.

I venture to bring to your attention one form of tabulated report that would tend to bring out how far your hospitals are answering this question of efficiency of *use* as well as those of efficiency of operation.

In almost every hospital there are the following classes of cases: The first I may call real hospital cases, namely: those that cannot without undue trouble and expense, or without danger to the community, be cared for outside of the hospital. There are plenty of these, if you only get hold of them, to occupy all the hospitals that we can maintain.

There are other cases that seek to enter the hospital for various reasons, such as for the convenience, financial or otherwise, of the family; for convenience of the doctor, because outside of the hospital there is no adequate provision for nursing or care, and because the patient has no proper home to be sick in, etc.

These cases could be classified and tabulated as follows: real hospital cases, defective care cases, defective home cases.

There is another classification, namely that of the hospital days during which hospital patients are kept in the hospitals while convalescing because they cannot be sent out to proper conditions at home either from lack of organized care or lack of proper home conditions.

I do not know how many of you will venture to make such a classification, but I do know that any hospital that does make it and makes it without fear or favor will add substantially to the efficiency of that hospital.

In addition to this I bespeak your sympathy and attention to the efforts that are now being made to coordinate and make effective in something like a comprehensive system the forces that have to do with prevention and handling of sickness both within and without the hospital.

We need a system that will cover the whole ground, not fragments of it, and we need to have the hospitals and their graduates take their proper places in organizing that system.

The stupid layman wants to know what impression you are making on the whole job, and you have got to answer that question.

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Hospital workers in the state of Ohio are to form a State Hospital Association, the initial meeting for the purpose to be held at Cedar Point on August 25 and 26. Dr. E. R. Crew, of the Miami Valley Hospital, Dayton, is taking the initial steps and has promises of the attendance of most of the hospital workers of the state. Numerous attempts have been made to form state hospital associations, but none of these efforts have proven successful beyond a very local character and generally for the purpose of some particular temporary interest.

# CURRENT HOSPITAL LITERATURE

ALBERT ALLEMANN, M. D., Foreign Literature.
*Army Medical Museum and Library, Office of the Surgeon-General United States Army.*

**Aberdeen Military Hospital.** The Nursing Times, 1915, II, No. 531.

Oldmill Poorhouse, at Aberdeen, has been completely transformed and fitted up as an up-to-date military hospital, with accommodation for some 850 wounded soldiers. The former inmates are now scattered among the poorhouses in various parts of Scotland.

**Scottish Women's Hospital for Foreign Service.** The Nursing Times, London, 1915, II, No. 531.

The Scottish Women's Hospitals have now five hospitals under their control, one of 200 beds at the Abbaye de Royaumont, and another of 200 beds under canvas at Troyes. In Serbia they have a surgical hospital at Kragujevatz, a fever unit at Mlandavatz, and another fever unit of 200 beds at Valjevo. They are shortly sending out another hospital of 200 beds to Serbia.

**Bangour Military Hospital.** The Nursing Times, London, 1915, XI, No. 533.

The Midlothian County Asylum, known as "Bangour Village," has recently been taken over by the military authorities and preparations are being made for the accommodation of 1,350 patients. Bangour, laid out on the plan of a modern garden city, is situated on the uplands, midway between Uphall and Bathgate, some fifteen miles west of Edinburgh. The former patients—more than 1,000—were distributed among kindred institutions in Scotland.

**Hut Wards in London.** The Hospital, London, 1915, LVIII, No. 1510.

The public has been asked to furnish these huts with easy chairs, cushions, books and flowers. When completed they will add 300 beds to the capacity of St. Thomas's Hospital. The editor suggests that hospital architects should learn many lessons from the different types of emergency or temporary wards and open-air hospitals necessarily so prevalent today, and predicts that the war will leave its mark on hospital design and architecture.

**Provision for War Cripples in Germany.** Douglas C. McMurtrie. Medical Record, 1915, LXXXVIII, No. 5.

Germany has inaugurated an extensive system to provide, surgically and economically, for wounded soldiers crippled in action. At the outbreak of the war, the first reliance was placed on the adaptation of existing agencies for the care of cripples. Dr. Konrad Biesalski, secretary of the German Association for the Care of Cripples, visited the various institutions throughout the empire and organized the work under (a) medical care (orthopedic and surgical) and (b) social care (teaching of trades and securing employment). The Kriegskruppelfursorge has now reached such proportions that Dr. Biesalski has turned over its further organization to the military authorities, thus securing uniformity and permanence of the work throughout Germany.

**Hospital Etiquette.** The Nursing Times, 1915, II, No. 531.

Hospital etiquette entails a certain training, but the writer feels that, as a root basis, it requires good manners, self-restraint, watchful alertness, and a kindly respect for the feelings of others. We are reminded that an institution is sometimes entirely misjudged by the bad manners and ignorance of some individual members of the staff, while, on the other hand, a smiling welcome extended to a humble wayfarer has often brought a blessing to a whole hospital.

**Injuring a Sanatorium by Sewage** (Schädigung einer Kuranstalt durch Abwässer. Zeitschr. f. Krankenanst., Leipzig, 1915, XI, No. 15.

The following case came up for decision before the German courts: The sewage and refuse from a factory was turned into a creek which flowed close by a private sanatorium. As the foul odor from the creek was seriously affecting the institution, the proprietor appealed to the courts for redress. The two lower courts rejected his complaints as irrelevant, but the supreme court decided the case in favor of the plaintiff, as it was shown that the purification plant was inefficient and that the impure water entered the creek not more than 150 meters above the sanatorium.

**A New Bed for Nurslings** (Ein neues Säuglings-Bett). R. Bickel. Zeitschr. f. Krankenpfl., Berlin, 1915, XXXVI, No. 10.

The bed is made of enameled iron and is fastened to a strong stand whose foot extends under the bed of the mother and is provided with rollers. The bed projects over the mother's bed and can be lowered or raised and turned in any direction, so that the mother can tend to the baby without the least inconvenience. The bed is covered with a strong enameled wire screen which can easily be turned back. By placing a sheet over this screen the child is protected from the light and from flies, mosquitoes, etc. When not in use the bed can be folded up, thus taking up a very small space. In the article are seven illustrations of the bed.

**A New Form of Bed Spring** (Eine neue Krankenbett-Matratze). M. Weber. Ztschr. f. Krankenpflege, Berlin, 1915, XXXVI, No. 10.

Numerous forms of bed springs have been constructed, but few have given satisfaction. This new form of spring has the usual rectangular iron frame. Eight strong steel springs made of the best material extend from one long side to the other in such a manner that they form a convex upper surface. These springs are connected with each other by numerous hooks. Resiliency in the long direction is obtained by a number of strong spiral springs at the head and foot ends of the frame. The advantage of the vaulted form of these springs over the usual types is evident. The description is made clearer by two illustrations.

**The Opportunity of Large Clinics in the Campaign Against Cancer.** Jonathan M. Wainwright. The Pennsylvania Med. Jour., 1915, XVIII, No. 10.

Dr. Wainwright firmly believes that if the hospital and its staff would get into closer and more confidential touch with the physicians of its cancer patients, mortality could be greatly reduced. Dr. Bloodgood, at Johns Hopkins, is mentioned as being the first surgeon to adopt the plan of inviting the attending physician to the operation, com-

plimenting him if the case is sent in early; or, if a late one, tactfully calling his attention to the conditions by which the disease could have been recognized earlier and explaining how much better results could have been hoped for if there had been no delay. Hospitals and their staffs who will apply the "Bloodgood method" actively will greatly increase their service to their communities.

**Experiences Concerning the Discharge of Insane Patients from the Hospital Against the Advice of the Physician** (Erfahrungen über die Entlassung Geisteskranker gegen ärztlichen Rat). Dr. Treiber. Allg. Zeitschrift f. Psychiat., Berlin, 1915, LXXII, No. 1.

During the last ten years 29 male and 56 female patients were discharged from the Landsberg State Hospital for the Insane against the advice of the director. Of this number 7 males and 25 females were completely cured after they left the hospital, 7 men and 12 women were greatly improved, 9 patients died at their homes. Concerning the remainder no information could be obtained. The author comes to the conclusion that the directors are often too strict in refusing the request of families to discharge certain patients. He thinks that patients who promise even a poor prognosis sometimes get well rapidly at home, or at least improve. He mentions that Tomaschny and Uhlmann, who have studied the same question, came to the same conclusion.

**The Establishment of Schools for Sick Children in the Hospitals** (Dell' istituzione di scuole per bambini degenti negli ospedali). Dr. R. Maffei. Ospedale Maggiore, Milano, 1915, III, No. 5.

Children of well-to-do people, who are compelled to stay away from school on account of sickness, can easily make up the deficiency after their recovery. It is different with poor children. A year lost in school is lost forever. For this reason the hospital S. Maria Nuova in Florence established in 1909 a school for its children patients, which has been carried on with good results ever since. There is also a kindergarten for the small children. Such a school exists also at the Bonifazio Hospital of the same city. This hospital receives principally children who have been declared incurable at the Pediatric Hospital. Elementary instruction is imparted to these children, that they may not be without the light of modern education.

**Prohibiting the Establishment of a Tuberculosis Sanatorium Near Summer Resorts by the State Authorities** (Behördliches Verbot der Errichtung einer Lungenheilanstalt in der Nähe von Sommergast- und Logierhäusern). Heilanstalt, Leipzig, 1915, X, No. 11.

A physician intended to establish a sanatorium for tuberculous patients in a region containing a number of summer resorts. As the law does not permit the establishment of a tuberculosis hospital if the neighboring property is injured by such an institution, the proprietors of the health resorts appealed to the state authorities. The latter decided the case in their favor, holding that though there may be no danger of infection, the business of these summer hotels would be injuriously affected, since the fear of infection, though only imaginary, would keep the people from frequenting such resorts.

**The Detention House in Hördt, Alsace** (Das Bewahrungshaus in Hördt, Elsass). Dr. J. Haberkant. Psychiat.-neurol. Wochenschr., Halle a. S., 1915-16, XVII, No. 11.

Of late years a number of detention houses for dangerous insane patients have been erected. This is only the inevitable reaction to the great extension of the no-restraint movement, and it shows that there is a limit to this method of treatment. Fortunately there are very few patients for whom the ordinary safeguards of our hospitals for the insane are insufficient. Aschaffenburg states that there is only one dangerous insane person to 50,000 inhabitants. But the conviction is gaining ground that every large hospital for the insane should have a safety division. The detention house at Hördt was erected in 1912, and has room for 42 patients. It is a handsome one-story building of rectangular shape. The large garden is surrounded by a wall fifteen feet high. The rooms are built in such a way that all corners are filled out by an oblique wall. All tubings for heating, electricity, etc., are hidden in the walls. The radiators are placed in niches below the window and closed up by iron doors. Other safety devices are an alarm apparatus, telephone and an electrical control clock. The eating vessels, drinking cups, etc., are made of paper.

**The X-ray Pavilion Under Construction at the Ospedale Maggiore in Milan** (Il padiglione di radiologia in costruzione all' Ospedale Maggiore di Milano). Dr. L. Parola. Radiologia med., Pavia, 1915, II, No. 3.

The x-ray has of late years acquired so much importance and so great an extension in all branches of medicine and surgery that specialists of great experience and the most perfect apparatus are necessary for its application. Through the generosity of an unnamed benefactor the Ospedale Maggiore in Milan has been enabled to erect a radiological pavilion of the most modern type. It will be devoted exclusively to diagnosis and x-ray treatment. The pavilion is of two stories and is provided with all the facilities and the most modern appliances for accomplishing its purpose. Of special interest is the fact that the first floor contains five sick rooms with 16 beds in all. These rooms are intended to receive patients who require special preparation before submitting to a radiological examination or such patients who, on account of their condition, cannot be returned to the various pavilions after each application.

**A Visit to the Military Hospitals of Paris** (Ein Besuch von Lazaretten in Paris). Dr. J. Eberhardt. American-Swiss Gazette, N. Y., 1915, July 14.

A large number of wounded are cared for in the great hospitals, Hôtel-Dieu, Pitié, Salpêtrière, Cochin, Beaujon, Necker, Val de Grace, etc. But the number of the wounded is so great that nearly 400 hopitaux auxiliaries had to be established. Large hotels, new school houses and public buildings were converted into hospitals with great skill. One of the finest of these auxiliary hospitals is the American ambulance established in the Lycée Pasteur at Neuilly. It is remarkable with what skill this enormous building has been changed into a modern hospital. The large lecture rooms have been converted into sick wards, which receive light and air from two sides. Each ward has three American nurses and two assistant nurses. There are two operating rooms, a bacteriological laboratory and a Roentgen institute. The surgeons are all Americans. Prominent among them is Prof. Cushing, of Boston, the noted brain surgeon, who has obtained remarkable results by his methods of operation. This hospital contains at present 600 wounded soldiers.

Of special interest is the Japanese hospital established in the Hotel Astoria. It has Japanese physicians and nurses, and the furnishings, instruments, etc., are entirely Japanese. The Russian hospital was established by the empress of Russia. It is under the direction of Dr. de Martell. Many ladies of the diplomatic corps at Paris are doing nurses' work at this hospital.

Dr. Carrel, of New York, is at the head of a hospital near Compiègne. He has a complete bacteriological institute and is assisted by two bacteriologists. He is at

present engaged in finding a method to combat suppuration of wounds which is so common in the present war.

**The Control of Communicable Diseases.** Dr. Eugene R. Kelley. The Amer. Jour. of Public Health, 1915, V, No. 7.

In the light of the gratifying and astonishing achievements of the past half century few now doubt the literal truth of Pasteur's statement, "It is within the power of man to abolish contagious diseases from the earth." Dr. Kelly is convinced that a complete realization of the vision and actual abolishment of all contagious diseases depends entirely on the willingness of mankind to pay the price. To his mind the principal factors in the successful solution are:

1. A smoothly working system of prompt reports of all communicable diseases to the health authorities from the physicians.

2. A carefully worked out routine system of study, and prompt investigation of all outbreaks by the health authorities.

3. Regulations for the isolation and supervision of persons suffering from contagious diseases, based upon both common sense and scientific knowledge and the principle of maximum protection to the public with minimum inconvenience and hardship to the patient and family.

4. The safeguarding of certain important channels of disease transmission, especially the water and milk supplies.

5. The widest possible utilization of certain public health machinery designed expressly to combat communicable diseases, viz.:

(a) The public health laboratories.

(b) The dispensary and hospital for contagious diseases.

(c) Public health nursing organizations.

(d) School medical inspection, so-called; or, better, hygienic school supervision.

6. The greatest of all forces at our disposal, that of education along public health lines, especially education of children and mothers, by

(a) The public press.
(b) Individual teaching.
(c) The schools.

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**The New Municipal Hospitals in Barmen** (Die neuen städtischen Krankenanstalten in Barmen). Gesundheit, Leipzig, 1915, XL, No. 12.

The new Barmen hospital is considered a model institution by experts in hospital construction. It is built on the pavilion plan, but all the buildings are connected with each other by one-story corridors. The five principal buildings have three stories each and each one has room for 120 patients. The hospital can thus take care of 600 patients, but there is room for 900 beds if necessity requires. The administration building and all the pavilions are heated by a central hot water heating plant. The hot water is carried through pipes in connecting tunnels to each building. A centrifugal pump driven by a steam turbine sets the water in circulation. The pump is placed in the circuit in such a manner that it sucks up the returning cold water and drives it, after having again been heated in the boiler, back to the peripheral parts of the system. Ventilation is accomplished by a centrifugal ventilator, which sucks the fresh air in from a small tower standing in the garden, and drives it through a dust deposit chamber, and, after being heated to 20° C. by special heating surfaces, to the various rooms. For economical reasons the hospital does not have its own electric plant, but gets its electric current from the municipal electricity works.

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# DEPARTMENT OF NURSING

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### The San Francisco Nurses' Meetings

Eastern delegates and visitors to the eighteenth annual convention of the American Nurses' Association in San Francisco were made to feel that their entire trip from the Atlantic seaboard to San Francisco was one continuous reunion and meeting. Upon their arrival in Chicago they were given a most cordial reception and were taken for a ride about the city, after which they were invited to tea in the Central Club for Nurses.

Again there came the kind invitation from the nurses of Los Angeles County to the visiting nurses to be their guests at the Mission Play on Thursday afternoon, June 17.

The whole body of nurses was transported in special cars to the San Gabriel Mission, just out of Los Angeles, where the play was given. It proved a most enjoyable and interesting occasion from an historical and ethical as well as religious point of view.

Los Angeles County nurses will long be remembered for their hospitality and for the opportunity they gave the travelers to enjoy this great treat.

The nurses' train arrived in San Francisco on Sunday morning, June 20, and it may be said that the sessions began that day, for there were several belated committee meetings held during the morning because appointments for them could not be kept earlier. The convention, however, opened its meetings with the sermon by Rev. C. F. Aked, D. D., LL. D., in the First Congregational Church. The service was an address full of sympathy and understanding of the work of the nurse, and was listened to with appreciation by the large congregation of nurses present.

Three organizations, separate and distinct, were convened, namely: (1) The American Nurses' Association; (2) The National League of Nursing Education; and (3) The National Organization for Public Health Nursing.

On Monday morning, June 21, the regular convention opened in the First Congregational Church by registration of delegates and reports of the various committees in the different associations, which all came together at 8 p. m. of that same day for the more formal meeting of a general session, Miss Cooke, president of the American Nurses' Association, presiding. The address of welcome was given by Mrs. Frederick G. Sanborn, president of the Woman's Board, Panama-Pacific Exposition, and responses were offered by Miss Goodrich, president of the International Council of Nurses; by Miss Cooke, president of the American Nurses' Association; by Miss Noyes, president of the National League of Nursing Education; and by Miss Crandall, executive secretary of the National Organization for Public Health Nursing, speaking for Miss Gardner, the president, who was detained by illness.

The tone of the meeting was most cordial and some very resonant notes regarding nurse education were struck by the various speakers. Dean Gresham, of Grace Cathedral, spoke significantly and feelingly along the same line. Altogether it was a meeting which caused the nurses to look upward and step a little higher for very pride in their officers and their accomplishments.

The National League, as well as the other organizations, continued their sessions throughout the week, discussing their various problems with candor and intelligence.

It would be impossible even to enumerate the subjects covered, but perhaps that which called for the greatest enthusiasm was "The Eight-hour Law for Pupil Nurses in California." Mrs. H. W. Pahl, superintendent of Angelus Hospital, Los Angeles, gave an able paper and opened the discussion, taking the ground that while the observation of the law crippled the hospital to a certain extent in the beginning, it seemed now to be to the advantage not only of the school, but of the hospital as well. It seemed to be the consensus of opinion that the hospitals missed their opportunity in not granting an eight-hour day to the pupils in training before they were compelled to do so by the law, which is the result of legislation effected by the labor unions. A strange and selfish feature of the law is noted in its failure to shorten the hours of graduate nurses in private practice. Some of the superintendents working under the law agreed that it tended to lawlessness.

The fact remains that the same results should have been obtained without resort to labor legislation.

The League also devoted time to discussion of plans and furnishings for class rooms; what constitutes good teaching; how to help pupils to study; the teaching of housekeeping in the training school; the social life of the student nurse; training school records, etc.

The meeting on Tuesday evening, June 22, in Festival Hall, on the grounds of the exposition, well-nigh failed to measure up to the high standard set by the sessions elsewhere. The programme was a mixed one in that it consisted of music and addresses by educators of more than local reputation.

As another has said, "The nurses had the pleasure of listening while they were freely discussed—an unusual opportunity." The theme of the chief speaker of the evening was "The Vocational Trend in Education." The audience had reason to expect from him, as commissioner of vocational and industrial education in the great state of California, a clear and uplifting discourse upon matters educational, and may be pardoned for an ill-concealed disappointment felt by nearly every nurse present. Their disappointment was largely overcome by an address by Dr. Downing, Assistant Commissioner of Education for the state of New York. Dr. Downing was in the audience and responded to the call of the chairman of the evening, Miss C. D. Noyes, whose wisdom in calling him will long be remembered.

Dr. Downing very thoroughly refuted the idea previously advanced that time spent upon subjects having no direct relation to work is wasted, and he did it in a way and with an enthusiasm that left no doubt in the minds of his hearers. The thanks of the nurses of this country should go out to Dr. Downing for his encouragement and to Miss Noyes for meeting the emergency by calling him.

The meetings were splendid and were helpful to an unusual degree. Delegates felt their inability to absorb but a small fraction of the knowledge put forth by the various departments and sectional meetings, though they must have heard that which fitted their needs to some ex-

tent. There seemed something for every kind of worker in the field of nursing and its allied subjects. Round tables, conferences and discussions were bulletined for almost everyone and for every hour of the day; even the fathers and mothers might have profited.

The social events must not be overlooked. The social hour, when tea was served by the California nurses each day from four to five in the afternoon, will be long remembered as a great pleasure, a rest, and an opportunity to renew old acquaintances or make new ones.

Those of us who had the honor to serve our alumnæ as delegates resolved anew to continue as permanent members in order to secure for ourselves the privileges of the conventions as they occur from year to year.

For enthusiasm in our present work, and for inspiration for the future, the Convention of 1915 at San Francisco has had no peer.

### Public Health Nursing

"A public health nurse should know something of sanitary engineering. There are many holding such positions who are merely trained nurses, who know nothing about preventing sickness. In five or ten years every board of health will employ a dozen public health nurses and that will mean excellent opportunities for women. The public health nurse is especially valuable in the country, where questions of water and milk supply, cellar and housing conditions need to be taught. The work requires both knack and training. No amount of training will save a stupid person; no amount of knack the ignorant person."—*Professor William T. Sedgwick, at the Conference on Vocational Opportunities.*

The speaker of the above in no sense purposed urging more advanced education for nurses as such. That he does so is incidental to the fact that he is advocating the employment of public health nurses by health boards.

There is a train of thought and reasoning suggested for a whole lecture or sermon in his last sentence—"No amount of training will save a stupid person; no amount of knack the ignorant person."

It has long been the plea that good material must be admitted to our training schools if good representative nurses are to be the output.

It rather looks, to the careful observer, as if the whole matter might adjust itself or be adjusted by the demands made upon the public health nurse in addition to those made by her. It may be said that not all nurses aspire to be public health nurses. True, and neither do a great many applicants to the schools of nursing aspire to be much of anything excepting that which lies within the present or within the two or three years of training; they have little thought for the future and they consequently thus prove the necessity for careful selection of applicants as well as thorough education.

The average teacher of nurses has this principle so indelibly impressed upon her mind, with all the reasoning of its pros and cons, that when she hears Professor Sedgwick say, "No amount of training will save a stupid person; no amount of knack the ignorant person," she is ready to exclaim, "*Quod erat demonstrandum!*"

## What Should Hospital Dietitians or Dietitian-Housekeepers Be Taught, and How Should They Be Trained?[1]

BY LAURA E. COLEMAN,
Dietitian Buffalo Homeopathic Hospital.

The demand of the present hospital world is for standardization—standard nomenclature, standard records, standard accounting, standard equipment, standard education for nurses, standard ideals. Is not this great body of hospital superintendents and trustees assembled for but one purpose—the standardization of hospitals in every department, by interchange of thought and plans of work, each giving to the other the best of experience and result in their special field? Why should there not, therefore, be a standard for hospital dietitians?

Within the past twenty years a great change has come over the educational side of hospital work. The length of a nurse's probation has been increased from one or two months to three or six months; her time of training from two to three and, in some schools, even to four years. The standard has been raised slowly but persistently. The nurse-in-training *must* have had one year at high school, or, better still, she must have graduated from high school. Trained teachers have, in all schools that can afford them, replaced the old-time graduate-nurse teacher, who taught what she knew and taught it well, too, but who often had no special training in the proper method of imparting that knowledge to others.

Trained dietitians are filling the place made for them as a result of the recent attitude taken by physicians toward food and its effect upon the human body. Fifteen years ago little was heard even in our best managed hospitals about food-value, calories, carbohydrates, etc., and a good steward, with a chef and his staff, supplemented by the work of the nurses-in-training on the ward floors, was considered sufficient. An occasional staff physician gave special attention to his patient's food, but with nothing of the definiteness of the present day, when even the smallest hospital has to meet this demand for every variety of special diet.

All nurses-in-training had, even twenty years ago, cooking lessons in which beef-juice, custards, jellies, toasts, liquid diets and gruels were the predominating features.

Today a pupil nurse is taught in a course of from ten weeks to three months the preparation, constituents and caloric value of foods for patients and the hospital household, and the proper way to measure and serve them. Before she leaves the dietary department she learns, or should learn, to prepare a well-balanced diet for any patient—salt-free, diabetic, fat-free, etc.—and if the dietitian is the woman for the position, the young nurse will also learn the cost and quality of foods, relation of supply and demand; and not least of all, when entrusted to assist with the checking of this, the heaviest expense-sheet of a hospital, she will learn how so to care for and dispense these foods that each shall reach its proper destination, suitably prepared, and so palatable that there will be little waste because the patient "did not like the food," and absolutely no waste from carelessness in dispensing.

Intelligent nurses-in-training require intelligent, well-trained teachers; and this, for one thing, the dietitian must be.

In a thirty to sixty-bed hospital the question "how and what shall patients, officers, interns, nurses and our faithful domestics be fed," is just as important as the same question in a hospital of a thousand beds. The same problems of feeding patients present themselves in small hospitals as in large ones. One patient taken into any hospital deserving the name is as worthy of careful feeding as are a hundred such patients.

Many thirty to forty-bed hospitals have not a trained dietitian, but someone must do the work intelligently, and it is upon the already overworked superintendent of the small institution that this grave responsibility rests. Armed with her long, or short, training in hospital dietetics, she grapples with the question and in most cases

[1] Paper read before the Conference of the American Hospital Association, San Francisco, June 22-25, 1915.

grapples intelligently; for what she has forgotten, or perhaps never knew, of calories and food-values, she makes up for by study and preparation, her mind being trained to meet just such extra demands. Then comes the luxury of a dietitian-housekeeper, for in the smaller hospitals, usually because of economy in salaries, the positions are combined. Besides, there would be insufficient work in a small hospital in either department to keep a woman, mentally active, contented with one position alone.

With a trained mind, such as a dietitian should have, and with the executive ability a hospital dietitian must have, she can readily do any hospital housekeeping by an additional short course in laundry management; for this, of course, is the crucial point in hospital housekeeping. With the splendid training she will have had in asepsis and absolute cleanliness, in her general domestic science course as dietitian, and with some knowledge of laundry work, counting that she has ability to manage people, the housekeeping will be very easy, so that on that side of the work I shall touch but lightly.

There is but one dietitian for any hospital, large or small, and that is the trained dietitian.

What shall she be taught? She shall be taught dietetics in all its branches: foods, quantity, quality, cost, value to patient, scientific distribution under a physician's orders; everything, in fact, that affects the well-being of a patient or household in the matter of proper feeding. This course of training should not be less than two years, and, if any academic work is attached, it should, as in several colleges and schools of domestic science, reach to four years. Surely two years, however, is little enough for anyone engaging in this so important a branch of hospital work, to give to her training. The physician gives five to eight years to his training; the trained nurse gives three years of arduous, continuous labor to her work; why should the hospital dietitian, who, by badly prepared foods, can undo all the good work of the physician, give so much less, as is sometimes the case?

In a letter to me regarding this paper, the writer stated that one superintendent had said that the dietitians sent him by a domestic science school were so very young and impractical that, added to a training school of young women, it merely made one more responsibility; and that thereafter he would employ only mature, practical dietitians.

I sympathize sincerely with him, as in the first hospital of which I had charge, a small hospital of thirty beds, I came to the same conclusion. From two of the best training schools I tried dietitians who, of course, took the position of dietitian-housekeeper. They could talk most intelligently and scientifically on food-values, could arrange and display all kinds of desserts and salads, knew to a degree the caloric value of foods, theoretically; but they lacked judgment—judgment as to quantity for thirty patients, nurses and hospital household—judgment as to care of and ordering of food-supplies. A vegetable garden was to them an untried field. They counted vegetables only in bushels and baskets, or bunches, as they had seen them in the domestic science schools. They were excellent theorists, but their extreme youth and total lack of practical experience was very discouraging.

I then decided that the domestic science training-schools were to blame entirely for turning out and recommending to hospitals needing dietitians an unfinished product, to complete her training at the expense of the hospital; but I now believe that a word of our needs to those schools would have given them an opportunity to help solve the problem.

Perhaps the lack of hospital ethics which they displayed was not the least trying part of their failure to fill the situation. They had been taught no sense of responsibility as to time. Fifteen minutes earlier or fifteen minutes later carried to them no grave responsibility.

Like the superintendent of whom I have spoken, I then decided that a trained dietitian was not for a small institution, and I engaged a practical dietitian-housekeeper of mature years and judgment—one who could utilize the asparagus and other vegetables from our own garden and could preserve or can fruits purchased in quantities, when such fruits were seasonable; in fact, one who, except for the fact that she knew nothing of calories and food-values, could give our patients well-cooked porridge, delectable gruels, perfectly-broiled steaks, and vegetables that it is a pleasure to remember. She was also an ideal housekeeper. The special diets, however, had to be arranged and planned by the superintendent of nurses. The nurses-in-training took their practical work in housekeeping with the dietitian-housekeeper and were sent to Miss Fannie Farmer for their cooking lessons and special dietary work.

For a small hospital this did solve the problem, but from broader experience I have quite changed my mind. I find that to administer a hospital of 150 beds, or five times the original unit, there must be a housekeeper *and* a dietitian, and that the dietitian must be trained, and well trained.

Where should she be trained? I believe hospital dietitians should be trained in some one of the many perfectly equipped domestic science schools or colleges for not less than two years, and that for at least six months this training should be supplemented by a practical course in hospital dietetics in some one of the many good hospitals of this country. For at least one month of this time it would be well if she could be given entire charge of the department.

The demand always creates the supply. If the members of this Association would appeal to the domestic science schools of the country for this extension course for would-be hospital dietitians, assuring them of cooperation in affording their qualified pupils an opportunity for this course of practical work, I believe they would be only too glad to do it.

As in our training school for nurses we select, from a class of fifteen or twenty, two or three, or maybe but one, who will make a good executive, and add her to our junior executive force, for practical experience in hospital work, so I believe these domestic science schools might select the three or four pupils from each class who show signs of executive ability—mature pupils with tactful, well-balanced minds, wishing to qualify for hospital work, and recommend them for this hospital extension course. If this were done, I am convinced that hospitals, both large and small, would fill dietetic vacancies with less waste of energy and efficiency.

In the hospital of which I have charge at present, we have tried this plan. Our present dietitian was trained for two years in a domestic science school which already sends out its pupils to one of the large hospitals for hospital experience. In addition to this she remained one year as junior dietitian in the hospital giving the practical course. She controls her kitchen force, selects and cares for the food-supplies, is responsible for all foods, teaches the nurses theory in classes, and two, who are with her continuously, have their experience in applied dietetics. This she does in a businesslike manner. Of course, in a hospital of 150 beds, she does not do the housekeeping, but were the same woman in a hospital of fifty beds, she would manage the entire domestic force, administer the housekeeping and, with a short course in the one trying spot in

housekeeping—the laundry—would do it easily. It does not seem to me that this would be practical if the domestic science schools would recommend for this extension course only those showing the proper qualifications for hospital work.

I have written several of the domestic science schools regarding a special hospital course in dietetics, and find that some of them already have a limited course, and that the schools themselves are giving thought to this subject. I quote from one school head who says that they give a normal course with dietetics, and a housekeeping course with dietetics. "But," says the director of the Domestic Science School, "I think a combination of both courses would be best for a hospital dietitian." "And," she continues, "I think graduates of such courses as ours are not prepared for independent dietitian work in hospitals because of their ignorance of hospital discipline and conditions. This is probably at the back of the friction we so frequently hear of between hospital superintendents and dietitians. Probably the best preparation for a dietitian would be hospital training and experience, followed by a good normal or housekeeper's course in home economics. Failing this, the next best thing is a good course in home economics followed by pupil dietitian or apprentice work in good hospitals. A satisfactory course I think would be easy of arrangement.

"It is my experience that as yet we have no standards for hospital dietitians. Each hospital is a law unto itself with regard to the work a dietitian is expected to do. It may range from all the buying and housekeeping for the hospital to a mere matter of preparing and sending up private patients' trays. If your Hospital Association will discuss this and point out the wisdom of hospitals' furnishing training schools with a clear outline of the duties demanded, it will help the cause of dietitian training materially."

Another director of dietetics says: "Occasionally one of our regular seniors wants to go into hospital work, and we invariably advise such a student to take training as a student dietitian. We feel very strongly that we cannot give, under collegiate conditions, anything which approximates the broader training for hospital work."

Teachers' College, Columbia University, says, in reply to the question as to feasibility of a practical Hospital Course for Hospital Dietitians: "Such a course of training in a hospital is not only practical, but highly desirable, and with suitable cooperation from the hospital could easily be arranged."

It would seem to me, therefore, from my own personal experience and the data I have collected, that qualified hospitals have but to offer this extension course to the domestic science schools for their would-be hospital dietitians, and the problem is solved.

I lay the matter before you for your consideration.

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## The More Common Diseases of the Kidney

BY HENRY F. KEEVER, M. D.,
Assistant Physician, Newton Hospital, Newton, Mass.; Assistant Physician, Convalescent Home of Children's Hospital, Wellesley Hills, Mass.

### ACUTE NEPHRITIS

Acute nephritis (an acute inflammatory condition of the kidneys) may be due to the action of cold or of toxic agents upon the kidneys, causing changes in the epithelial, vascular and tubular tissues. It may follow exposure to cold, especially when associated with alcohol, or may be due to the poisons of the specific fevers, such as scarlet fever, typhoid, diphtheria, pneumonia, tonsilitis, etc.

Toxic agents, such as turpentine, potassium chlorate, carbolic acid and urotropine may cause an acute congestion which may terminate in acute nephritis. Sometimes it follows severe burns or extensive skin lesions.

*Symptoms.* The onset is usually sudden, especially after exposure to cold. After fevers the onset is more gradual, with puffiness of face or ankles. The urine changes are characteristic. The urine is scanty, high-colored, with blood, albumin and casts. The quantity may be 4 to 5 ounces in 24 hours. Specific gravity is high, 1.025 or more; color varies from a smoky to a deep red brown; albumin is abundant, and the sediment contains leucocytes, blood and casts.

The onset is sometimes insidious and may be accompanied only by slight edema.

*Prognosis.* The outlook varies with the cause of the disease, and usually leaves a damaged kidney.

*Treatment.* Since the kidneys are damaged, they should have rest. Elimination must take place through the skin and bowels. The patient *must be kept warm.* In pneumonia, especially in young patients, we stimulate with cold air, but in nephritis warmth is always indicated.

The diet consists of milk, gruels, bread, butter, oranges, grape-fruit, cereals and rice. Liquids are usually limited to about three pints. Proteids are always restricted.

Heat in the lumbar region may stimulate the kidneys and allay pain. Hot bottle, warm flannels, hot plates, flat irons. Be careful about burning the patient. Hot air baths may be given.

*Technic for hot air bath.* Cradles to arch the bed; cover cradles with rubber blankets, then with woolen blankets; an alcohol lamp to supply heat and a section of pipe to go under the bed clothes. Ice cap to head. Hot lemonade before starting flame. Watch the pulse. The duration of the hot air bath should vary from twenty minutes to an hour.

The convalescence is apt to be long and slow.

### CHRONIC NEPHRITIS

a. *Chronic glomerular type.* This type is characterized by inflammatory changes in the glomeruli and epithelium. It may follow an acute nephritis or set in insidiously.

The urine has a specific gravity of 1.020 to 1.025, is diminished in quantity, turbid, albumin + + with fatty casts and red blood cells. The face is pale and puffy, with general edema, and a pasty complexion. The pulse is bad and arteries palpable. It is seen often in young adults.

*Prognosis.* Poor.

*Treatment.* Same as in acute nephritis.

b. *Chronic interstitial nephritis.* A slow, creeping degeneration of kidney substance, usually associated with marked arterio-sclerosis. It is one of the natural sequences of growing old. The kidneys are small, with thick adherent capsule and much increase of fibrous elements. Urine, pale; the specific gravity is always low, 1.005 to 1.012; a trace of albumin may or may not be present; the sediment is scanty with few hyalin casts.

*Treatment.* Quiet life with least possible strain on heart, arteries and kidneys. No alcohol. Limited meat. Uremia is the end result of many cases of nephritis. It is marked by restlessness, mental wandering, often uriniferous odor to breath. These cases must be freely purged and sweated.

### PYELITIS

An inflammation of the pelvis of the kidney induced by bacterial invasion. It is common in pregnancy, infancy, and with an infected bladder.

*Symptoms.* Pain on affected side, temperature, sweats, The urine may contain large amounts of pus, which may be intermittent at times. Pyelitis is especially common in

infants and young girls. The infection may come from soiled diapers, through the urethra, or from the blood stream.

In pregnancy it is due to lowered resistance of the kidney pelvis, usually from pressure.

The diagnosis usually depends on the urine examination.

*Treatment.* Water + + + fluids must be forced. Bowels must be kept free. Hexamethylenamin. This can be effective only in an acid medium. The diet must be nonstimulating.

ECLAMPSIA

*Albuminuria of pregnancy.* It is due to a disturbed metabolism produced by some foreign substance originating in the fetus or mother. If the mother is unable to produce a sufficient number of antibodies to neutralize her toxins, or if the production of foreign substances is disproportionately great, the equilibrium of the mother is disturbed and one of the forms of toxemia occurs. In the early months it is nausea and vomiting, morning sickness; later months, headache, dim vision, rise in blood pressure, and albumin in the urine which, unless attended to, will terminate in eclampsia or convulsions. The convulsions last from one to two minutes to half an hour.

If eclampsia is caused by some substance circulating in maternal blood, the origin of which is in the products of conception, then to cure we must remove the cause or the pregnancy should be terminated.

DIABETES MELLITUS

"A disorder of nutrition in which sugar accumulates in the blood and is excreted in the urine, the daily amount of which is increased."

Hereditary influences play an important role, and cases are on record of its occurrence in many members of the same family. Men are more frequently affected than women, the ratio being 3 to 2. It is a disease of adult life. It rarely occurs in childhood, but when it does occur the prognosis is bad. Hebrews seem especially prone to it. The combination of intense application to business, over-indulgence in food and drink, with a sedentary life, seem especially prone to induce the disease. Theoretically it may be produced—

1. By disease of islands of Langerhans in the pancreas.

2. By ingestion of a greater quantity of carbohydrates than can be stored at the time in the liver as glycogen. This causes temporary glycosuria.

3. By changes in liver function. The onset is gradual and either frequent micturition or great thirst first attracts attention. The disease is characterized by great thirst, passages of large quantities of sugar urine, huge appetite and progressive emaciation. Thirst is the most distressing symptom of the disease. Large quantities of water are needed to keep the sugar in solution. Despite a huge appetite the patient very quickly becomes emaciated.

*Urine.* The quantity varies from quarts to gallons. Specific gravity is high, 1.025 to 1.045. Pale, sweetish odor, acid, sugar ½ to 10 percent. Fehling's test is positive.

Diabetic coma comes on in a considerable portion of all cases. Weakness, fainting, gradually deepening to unconsciousness. The coma is due to acid intoxication.

*Prognosis.* Under 40 it is bad. Over 40, with care, it is more amenable to treatment.

*Treatment.* Hygiene, absence of worry, and a restricted diet. Carbohydrates are reduced to a minimum.

Death is usually ushered in with coma, gradually deepening to unconsciousness and the Chyne-Stokes breathing.

## SISTERS OF CHARITY MAKE BIG IMPROVEMENT AT DALLAS

### New Addition to St. Paul's Sanitarium Will Contain Ninety Private Rooms

A contract for the construction of an addition to St. Paul's Sanitarium at Dallas, Tex., to be devoted mainly to the care of private patients, has recently been awarded. The addition will cost $200,000, exclusive of equipment, which it is estimated will require an additional expenditure of $25,000. It will contain ninety private rooms, which will bring the capacity of the sanitarium up to 225 beds. Fourteen of the private rooms will have baths and toilets in connection. The following description of the building is given by the Dallas *News*:

"The new wing will be a five-story brick structure, 175 by 90 feet, with Carthage stone trimmings and slate roof. It will be fireproof throughout and will be equipped with three inclosed staircases and two inclosed elevators. The most modern plumbing, lighting and heating equipment will be installed.

"Besides the private rooms on each floor, there will be a waiting room, a diet kitchen, a sewing room, two service rooms and storage closets, etc. On the first floor will be located a nurses' instruction kitchen, a storage room for drugs, two pathological laboratories and a morgue.

New Addition to St. Paul's Sanitarium, Dallas, Tex.

"On the second floor will be located the interns' quarters, with private bath and toilets, and a large sitting room. An up-to-date pharmacy will be on this floor. The third and fourth floors will be taken up almost entirely with private rooms.

"The fifth floor will be used mainly for operating purposes. There will be four general operating rooms, with washrooms between, one operating clinic, with sterilizing and washroom in connection, and three specialists' operating rooms. There will also be located on this floor the instrument, sterilizing, splint, recovery, nurses' and supply rooms and warming closets, and also an x-ray room, with waiting and dark room adjoining. The doctors' quarters will also be on this floor. At the west end of this floor will be two small wards for children.

"A new kitchen will be built in the rear of the main building. In connection with the kitchen will be a bake shop and a cold storage house 12x48 feet."

St. Paul's Sanitarium is conducted by the Catholic order of the Sisters of St. Vincent de Paul, by which it was opened in 1898. The buildings now in use were erected at a cost of $280,000. The institution ministers to the sick and infirm of all classes, rich or poor, without regard to creed, and is said to have gained much popularity among the people of Texas.

The plans for the addition now in course of construction were drawn by Architect J. Ed. Overbeck, of Dallas.

# PREVENTION OF TUBERCULOSIS

*Conducted under the auspices of*
THE NATIONAL ASSOCIATION FOR THE STUDY AND PREVENTION OF TUBERCULOSIS

## Social Activities of One of New York's Tuberculosis Clinics

One of the hopeful indications of the increasing efficiency of the much-maligned dispensary is the broadening conception of work which some few of these institutions are observing. Not only is there a growing insistence on increased efficiency in medical standards, but the hitherto promiscuous social work is being standardized as well.

Even the tuberculosis clinics are adding social service machinery, as is evidenced by the experience of a number of such institutions in New York, Philadelphia, Boston and Chicago. Mrs. Herman M. Biggs, wife of the commissioner of health of New York State, in a recent address before the New York Association of Tuberculosis Clinics, describes some of the most interesting social activities of the Chelsea Clinic of the New York City Department of Health. The Chelsea Clinic is located on the west side of New York, near 20th street, in a district whose population has changed radically in the last ten years from a high-grade residential group to a laboring, tenement house and boarding house group. Speaking of the social work of the clinic in this neighborhood, Mrs. Biggs says:

"We have been holding for more than two years fortnightly conferences at the Chelsea Clinic, to which all social workers in the district are invited, to discuss the conditions and needs of the tuberculous families and to formulate plans to rehabilitate these families. At the conferences there are frequently twelve or fifteen in attendance, and they have been not only most helpful to all taking part in them, but are most useful in preventing any overlapping in the relief work.

"We have formed a Chelsea class in dietetics at which there are in attendance many mothers and several little mothers. A skilled teacher gives most interesting and practical talks on the values of foodstuffs and the preparation of simple, nourishing and inexpensive foods, emphasizing and contrasting the relative cheapness and the great food value of milk as compared with eggs and meat. She gives simple means which are helpful in demonstrating of what a nourishing and inexpensive meal should consist.

"We follow up these lessons by sending trained dietitians into the homes of tuberculous families under our observation. The teacher not only goes into the home and teaches cooking, but she goes with the members of the family to teach them how to purchase foods, kitchen utensils and everything needed in the home.

"To encourage thrift among the mothers, and to help them to procure for themselves much needed kitchen utensils, brushes, brooms, etc., we are giving a trading stamp book to each one, with enough green trading stamps to fill one-third of the book. These are given with the understanding that when they have collected enough to fill the book, they can be used to buy useful things for the kitchen. We feel that this will add materially to the interest which the mothers have in the work.

"The Chelsea Clinic is the only clinic in New York City, I believe, where milk is dispensed. We have been doing this for nearly two years, and last year 65,514 quarts of milk were dispensed. For economic reasons, it seemed best to me to give up the distribution of eggs and to increase the amount of milk dispensed.. We feel that this has brought many patients to the clinic who otherwise would not have come and has stimulated their interest and regularity of their attendance.

"During the past year we have distributed 2,139 articles of clothing and bedding and 149 pairs of shoes. This includes a number of entire outfits provided for destitute patients sent to sanatoria or preventoria.

At the Chelsea Clinic. Corrective exercises for muscles of spine and legs.

"One of the most, if not the most, important factor in preventive and relief work is improvement in the housing conditions. What progress can one make in a three or four-room tenement with few windows, and these often nailed down, and with six to ten people existing in it, the usual boarder occupying the best bed and eating the eggs if there are any? But moving families into better quarters is very expensive for the society and means large funds, as rents must be paid regularly every month. In Chelsea, where we can move a family, one of the most difficult problems is to find a better and more sanitary place.

"About two years ago, physical training classes for the children were started at the suggestion of the People's University Extension. The children are being taught simple corrective exercises, how to breathe and stand properly. They become very much interested in this work and in many cases the development of the muscles of the chest, shoulders and arms has been astonishing. When the weather is propitious, the classes are held in the yard. To encourage the work of the children, bathing suits are given as prizes, these being chosen because a new public bath has been opened near the clinic on 28th street, and we feel that this will stimulate the children, not only to keep clean, but will help them grow physically stronger as they learn to swim. Similar classes have since been es-

tablished in connection with Bellevue, Harlem, Italian, Mott Haven and Stuyvesant Clinics.

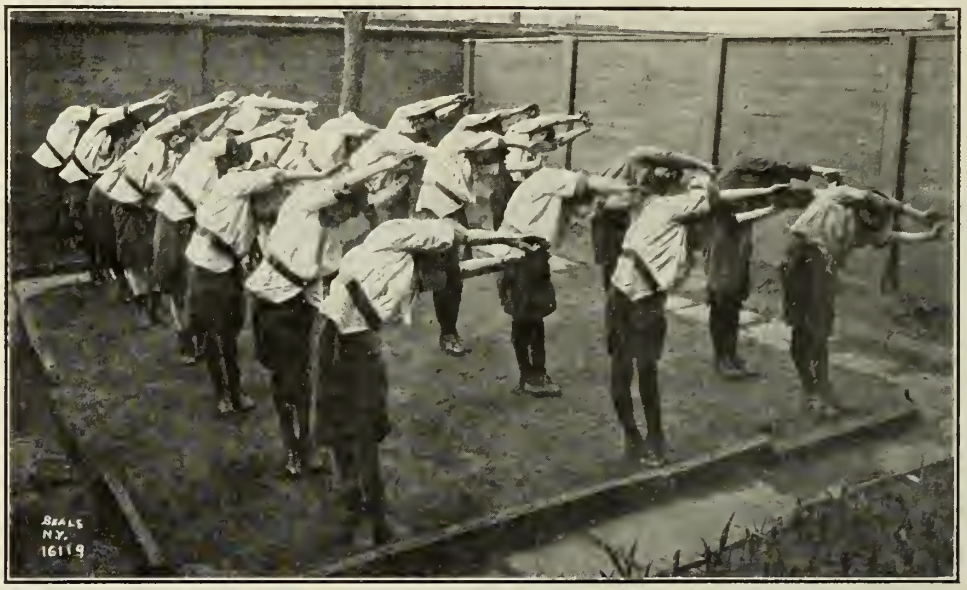
"Arrangements are made so that the children can purchase at the clinic the bloomers and middies used in the corrective exercise classes for 25 cents a suit. Those who cannot afford to bring all of the 25 cents at once are permitted to purchase on the instalment plan. They are pleased and happy with their suits and can hardly wait for the time to go home and show them to their mothers.

"We have a Health and Homemakers' Club, the object of which is to promote health, happiness and prosperity in the home through class work, which includes talks on home sanitation and domestic economy. Weekly demonstrations at the clinic are given by means of a large doll house. The boys are making the furniture and are taught simple carpentry, while the girls are taught domestic work, such as bed making, dusting, sweeping, etc. They have lessons in sewing, weaving rugs and dressing their dolls. We have a sewing machine and the girls are making their own dresses, the mothers being asked to come in and assist whenever it is possible.

"We have in the Chelsea district, I think, the first and perhaps the only Preventorium Nursery. While I believe that many persons who are best fitted to judge are coming to question whether nurseries are altogether desirable (since they remove the responsibility for the care of the children from the home), still I do feel that a nursery for the children of the tuberculous is a most important and necessary adjunct to the tuberculosis clinic. For, while the children must return to their infected homes at night, the fresh air and nourishing food which is supplied in abundance certainly increases their resistance.

"We have a roof garden where the children spend most of the day, and also a most successful kindergarten.

"The children are obliged to take long naps in the afternoon and are given a nourishing supper before going home. We are also giving a number of school children a midday dinner. Every child who attends the nursery is admitted through the clinic and in this way we have careful supervision over the entire family. We established this nursery because of the difficulty encountered in placing children of the tuberculous in other nurseries."




At the Chelsea Clinic. Corrective exercises for muscles of side and waist.

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### A Stock Lecture on Tuberculosis

The National Association for the Study and Prevention of Tuberculosis has prepared a stock illustrated lecture on tuberculosis. The lecture is illustrated with twenty-seven lantern slides carefully selected and finished in the most approved manner, and has been prepared in such simple language and in such form that anyone who can read English can deliver it. All that is needed is a man to operate the lantern and a man to read the lecture. Everything possible has been done to perfect the text of the lecture and to make it of the most practical value. It deals with the prevention of consumption, bringing in a discussion of the nature of the disease, the channels and methods of infection, and the means and precautions to be taken to cure and prevent it. Mechanically, the lecture is arranged to facilitate its use in every possible way, and under all sorts of circumstances.

Associations, boards of health, and others interested in tuberculosis work will find this lecture of great service in their educational campaign. It may be used very conveniently and with good effect in motion picture theaters, lodges, schools, churches, and elsewhere. It takes from 18 to 25 minutes to deliver the lecture effectively. Some organizations will find that they can use several sets of these slides, keeping them in circulation on regular schedules.

The National Association will furnish a copy of this lecture free to organizations or individuals making application for it. The lecture itself is of little value without the slides. It is possible, however, to select slides which could be used to illustrate the lecture from some other set which may be at hand.

For those who have no slides available, the National Association for the Study and Prevention of Tuberculosis has arranged with a manufacturer in New York to furnish sets of the slides, boxed, f. o. b. New York, for $7.00. Bills will be sent for these slides directly from the manufacturer, John F. Sweeney & Son, and all checks should be made payable to this firm. Both slides and lecture should be ordered from the National Association for the Study and Prevention of Tuberculosis, 105 East 22d street, New York City. The Association can also furnish other slides at 25 cents each. An illustrated descriptive list will be furnished on request.

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Ground was broken the latter part of July for an addition to the St. Thomas Hospital, Nashville, Tenn. The new structure will be 150 by 50 feet, and five stories high. Two hundred thousand dollars is the estimated cost. With the completion of this building the oldest building of the present group will be converted into a home for nurses.

# PHILANTHROPY AND THE PUBLIC HEALTH

THE NEW YORK ASSOCIATION FOR IMPROVING THE CONDITION OF THE POOR.
BAILEY B. BURRITT, General Director.
WILLIAM H. MATTHEWS, Director.
*Department of Family Welfare.*
DONALD B. ARMSTRONG, M. D., Director.
*Department of Social Welfare.*

## DO THE PEOPLE WANT GOOD FOOD?

### A Kitchen for the Public

BY HOLLAND HUDSON

Last February an old saloon building on Tenth avenue in New York City, in a longshoremen's and laborers' district, was thoroughly renovated and converted into a people's kitchen under the direction of the Committee on Public Kitchens, of the Department of Social Welfare, of the New York Association for Improving the Condition of the Poor. In this neighborhood there are few restaurants, and these, usually connected with some water-front groggery, dispense low-grade food, poorly cooked, unpalatable and indigestible, for the retail price of good food elsewhere. The cooking in many homes in this part of the city is not much better; and as most of it is done over wood fires, the work is exceedigly uncomfortable, particularly during the warm months. The physical result frequently is malnutrition; the psychological one, the decay of the manners and decency which is usual in the most frugal home where meals are a social as well as an alimentary function.

It was to counteract these dangerous currents in the eating habits of the neighborhood that the kitchen was opened.

The committee felt that the kitchen was but an experiment, aimed at the improvement of the conditions whereby the wives of this district sent their men to low-grade saloon-restaurants and fed their children and themselves upon substantial groceries only because they could not buy sufficient portions of nutritious, well-cooked food nearby at any price within their reach. It placed on sale menus composed of popular and nutritious foods, served in workingman's portions, at prices lower than the retail cost of the materials.

The longshoreman who goes to his work in the gray dawn need no longer stay his stomach until noon with a pony of red-dog whiskey and the foods offered at the free lunch counter unless his tastes run that way. For less outlay he can buy a cup of hot coffee and a substantial breakfast nearby at the People's Kitchen and eat at a table from clean dishes. His wife need not build a hot fire in the wood stove at noon to get the children their luncheon, for by sending one of them to the People's Kitchen with a suitable container, she can set a hot, cooked meal on the table for less than the materials would cost her at the grocer's. Should she go on a visit to her mother, the husband can get a substantial evening meal at the Kitchen without wasting his substance in having to "stand treat" for others.

In these transactions there is no element of "charity" or almsgiving. The food is purchased through the Association's regular channels in large quantities. In this way it is possible to obtain the best goods available at low cost. Enough is added to the cost of the materials to pay for the cooking and serving, so that the kitchen is actually self-supporting.

The serving of every meal is a business transaction in which the purchaser is able to buy at a bargain without divulging his creed or beliefs or otherwise satisfying the curiosity of amateur sociologists.

The committee which planned and directed the opening of the People's Kitchen consists of:

Mrs. James A. Burden, chairman; Miss Charlotte Barnes, Miss Beatrice Bend, Mrs. Ernesto Fabbri, Mrs. Marion Hollins, Mrs. Ralph Pulitzer, Miss Ruth Twombley, Mrs. William K. Vanderbilt, Jr., Mrs. James Watson Webb, Mrs. William Laimbeer.

Throughout the administration of the kitchen full advantage has been taken of the experience of the Social Welfare Department of the A. I. C. P. in dietetic research and in serving palatable and nutritious food at low cost to school children in New York City. Like every other activity of the Association, it has been held to a high sanitary standard. The methods of handling and preparing food have been studied and every possibility of contamination eliminated. Every employee of the kitchen is compelled to pass a rigid physical examination, and no person having any affection even remotely communicable has been employed in any capacity. The kitchen is efficiently screened from flies and other insects. On a recent visit of the Department of Health Food Inspectors it received a one hundred point score.

The first public kitchen in New York where people may buy cooked dishes for less than the retail price of the raw foods.

So far from resembling those soup kitchens and coffee stands which spring up overnight in industrial crises and then disappear, the People's Kitchen has established itself as a permanent institution, and investigations are now under way to determine the best site for the first branch kitchen.

# PREVENTION OF BLINDNESS
# MATERNITY

*Conducted by* CAROLYN CONANT VAN BLARCOM, R. N.,
*Secretary National Committee for the Prevention of Blindness;*
*Chairman Committee on Prevention of Blindness and*
*Midwives National Organization for Public Health*
*Nursing.*

## What Women's Clubs and Nursing Organizations Can Do to Prevent Blindness

[Note. The following suggestions, which have been formulated for Women's Clubs and Nursing Organizations, and published in pamphlet form by the National Committee for the Prevention of Blindness, are reprinted in these pages with the hope that some of the suggestions offered may be adopted by readers of THE MODERN HOSPITAL.]

It is estimated that 50 percent of all blindness is preventable. This statement will be surprising to many—that one-half of the sightless people in this country need not have been blind had proper care been given to their eyes. But it has long been known by those endeavoring to prevent unnecessary blindness that more than a quarter of the pupils in the schools for the blind are sightless because their eyes were not properly treated during the first few days of life; that poor midwives are in part responsible for this tragedy; that children become totally or partially blind from neglected "sore" and "weak" eyes, and from neglect after attacks of such infectious diseases as measles, scarlet fever, etc.; that progressive nearsightedness among children may cause total or partial blindness if neglected; that household and industrial accidents cause the loss of many eyes; that drinking wood alcohol or inhaling its fumes in close places causes both blindness and death; that inadequate lighting and glaring surfaces are responsible for much visual disturbance, including eye-strain; and that eye-strain is a frequent cause of both mental and physical inefficiency.

Visiting nurse organizations and women's clubs, working independently or, better still, together, can perform

Fig. 1. This baby had sore eyes when it was taken in hand by the visiting nurse. Its sight was saved by the prompt medical and nursing care which were given it. This means one less blind person in the community.

valuable service in the elimination of these causes, thereby saving babies, children and adults from lifelong blindness.

"BABIES' SORE EYES" (*Ophthalmia Neonatorum*)

This disease, which causes so much blindness, is preventable and, if taken in time, is curable.

The prevention of blindness from babies' sore eyes is accomplished through the routine use of 1 percent solu-

Fig. 2. (By courtesy New York Department of Health.) A good midwife acts as nurse, friend and teacher—she is an important factor in reducing the mortality and morbidity of mothers and babies.

tion of silver nitrate, or some such prophylactic, in all infants' eyes immediately after birth, and by prompt and skilful treatment of babies' eyes when they become red, swollen and discharging, whether or not a prophylactic has been used.

1. Does the birth certificate used in your locality include the question, "What preventive did you use for

Fig. 3. This boy is obviously suffering from some visual defect. Continued neglect and the resultant eyestrain will probably mean serious trouble later.

ophthalmia neonatorum? If none, state the reason therefor"?

2. Are prophylactic outfits distributed gratuitously by your health officer to doctors and midwives?

3. Are doctors, midwives and parents required to report to the health officer, within six hours, redness, swelling or discharge from the eyes of infants in their care who are under three weeks of age?

4. Is this reporting law printed on the birth certificate —thus acting as a constant reminder?

5. Has the Department of Health a nurse in its employ, or does it so cooperate with a nursing organization that it may send a nurse at once to visit each reported case and secure adequate medical or hospital treatment for uncared-for cases?

6. Are there such hospital facilities for the care of babies' sore eyes that the health officer may send an infant to a hospital without delay if the eyes are in a serious condition?

Take these points up with your health officer, interested oculists and obstetricians, and don't rest until they are all attended to. Make it your business to see that any baby suffering from sore eyes, of which you have knowledge, is given prompt and adequate medical attention.

Try to have at least one nurse in the community for eye work exclusively, and see that there are hospital facilities for treatment of severe cases of babies' sore eyes.

### MIDWIVES

These women attend about half the births occurring in this country, and the majority of them are dirty, ignorant and generally unfit to assume the care of mothers and babies. Although the carelessness of many physicians is equally reprehensible, it is due in great measure to the ignorance and neglect on the part of midwives that many babies become blind from babies' sore eyes.

1. Are there midwives practising in your community?
2. Are they registered by an official body?
3. Is it required that they be adequately trained; pass an examination; obtain a license; and register before beginning to practise?
4. Has your community a midwife training school connected with a good hospital?
5. Do the practising midwives give clean, careful nursing care to mother and child, and instruction to the mother concerning hygiene of pregnancy and care of her child?
6. Has the State or City Health Department adopted rules regulating midwives' practise in detail and requiring them to summon a physician in all but normal cases?
7. Are there inspectors to enforce the rules and give helpful advice to the midwives?

Make it your business to find out about this, for the sake of the mothers and babies. Your Board of Health is the proper body to have control of midwives. The Board of Education should regulate their training and licensure.

### EYESIGHT OF SCHOOL CHILDREN

Many normal children seem backward because they have sore eyes or defective vision. Failure to correct these defects will probably mean continued retardation for many of the children, and inability to reach their highest possible mental and physical development and economic efficiency. Continued neglect may result in partial or total blindness.

1. Are all class-rooms in your schools adequately lighted?
2. Are the blackboards and tops of the desks lusterless?
3. Are all of the desks adjustable?
4. Are the children's eyes carefully and regularly examined for nearsightedness and other visual defects, and for various kinds of "sore" eyes?
5. Is this done by an oculist?
6. Are there clinics where school children with "sore" or "weak" eyes may be treated?
7. Is there provision for furnishing eye-glasses to indigent children who need them?
8. Are common towels allowed in your schools? (They spread eye diseases.)
9. Are the children taught how to take care of their eyes?

Fig. 4. This chipper in a foundry was provided with goggles to protect his eyes from flying particles.

Improving the eyesight and general surroundings of school children will be of immediate benefit to them, and will increase their chances for enjoying health and prosperity later in life.

Talk to your Board of Education about this—it is important. The children can't do it themselves.

INDUSTRIAL ACCIDENTS

Many good workmen are seriously handicapped and even become public charges as a result of losing one or both eyes in an accident that might have been prevented. Men, women and children often suffer from severe eye-strain because they are not provided with adequate light while at work.

1. Are workmen in the factories and shops in your locality protected from eye accidents by goggles; guards on emery wheels; screens to catch flying chips; guards on water gauges; etc.?
2. Are the factories, workshops and workrooms adequately lighted?
3. Are workmen examined to see that they are not especially liable to accidents because of defective vision?

Take these points up with your Department of Labor, Industrial Safety Commission, or some similar body.

The eyes are bread-winners and must be carefully guarded.

WOOD ALCOHOL

Wood alcohol is a poison which may cause blindness or death if swallowed, or if its fumes are inhaled in an inadequately ventilated place.

1. Have you a law forbidding wood alcohol to be sold in any form without a poison label and warning?
2. Is the use of wood alcohol absolutely forbidden in beverages, medicines and toilet preparations?
3. Are your druggists, paint and varnish dealers, liquor dealers, grocers and barbers prosecuted for failure to comply with the above restrictions?
4. Is wood alcohol used in any of your local industries? If so, are employers required to protect their workmen from poisoning by providing adequate ventilation?

Fig. 5. Emery grinders, each of which is equipped with a protective hood of steel plate, and a plate glass shield, which prevents the dust from flying into the men's eyes. As an additional precaution, there are exhaust connections from the rear of each hood to a forced draft pipe.

Your Board of Pharmacy, Department of Labor, Health Department and Commissioner of Excise have jurisdiction in this matter. Find out what they are doing about it. In the meantime, urge your druggists to give up the sale of wood alcohol, and urge your friends to use denatured alcohol instead. It is safer and cheaper than wood alcohol.

The National Committee for the Prevention of Blindness wants your help and cooperation in spreading the knowledge that much blindness is needless. It has data and information, lantern slides, exhibits and pamphlets on the various causes of unnecessary blindness and methods of prevention, and it is glad to share these with workers in all parts of the country.

In order to accomplish the ends suggested in the foregoing program, it is necessary to have official action, supported by public opinion. Try to have at least one big

Fig. 6. Blind for life from drinking wood alcohol, which had been used as an adulterant.

popular meeting annually under the joint auspices of the local Medical Society, the Health Officer, Superintendent of Schools, Y. M. C. A., women's clubs, nursing organizations and relief agencies. Arrange for talks before school children, mothers' clubs, etc., and secure as much newspaper publicity as possible. Write to the National Committee for suggestions and assistance.

*The educational work must be sustained—the effort unremitting.*

ELLA L. BLAIR,
Chairman, Public Health Department, General Federation of Women's Clubs.

CAROLYN C. VAN BLARCOM,
Chairman, Committee on Prevention of Blindness and Midwives' National Organization for Public Health Nursing,
Secretary, National Committee for the Prevention of Blindness, 130 East 22nd street, New York City.

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The Young Women's Christian Association is erecting a central club for nurses at 132 to 138 East Forty-fifth street, New York City. The structure will be fourteen stories high, and will contain, in addition to its general club features, sleeping accommodations for 254 nurses. The facade of the building will be of Italian design, with a base course of granite, above which the walls will be of red brick, trimmed with limestone and terra cotta to match. The entire building will be as fireproof as possible, with steel skeleton structure, brick walls and terra cotta partitions.

# DISPENSARY AND OUT-PATIENT WORK

Conducted by MICHAEL M. DAVIS, Jr.,
*Director of the Boston Dispensary.*

### Venereal Clinics in Buffalo

The Board of Health of Buffalo, N. Y., has undertaken to treat a number of cases of syphilis and gonorrhea in one of the hospitals under its control.

The expense of retaining a number of cases of syphilis and gonorrhea under hospital care has been one of the stimulating forces leading to the establishment of hospital clinics for the treatment of these diseases, as ambulatory cases. According to a report, the dispensary clinics for these diseases will be substantially enlarged in the near future, and will care not only for cases that have previously received treatment in the hospital, but also for other cases.

Increased provision of good treatment for syphilis and gonorrhea is becoming a recognized need in more communities every year. The growth of out-patient clinics to meet this need is a natural consequence.

### A Crumb of Fact

There is a well-managed out-patient department of a hospital in a New England city of 150,000 population. All applicants for treatment are interviewed by the social service department, which thus acts as the admitting agent for the out-patient department. Last year, according to the annual report recently issued, there were 2,987 applicants for treatment. We do not find in this report a discussion of "dispensary abuse"; but we do discover that 251 of the applicants were referred to the offices of private doctors. This is 8⅓ percent. The reason for this reference was that it was felt that these patients could afford to pay a private doctor for the treatment which they needed.

This is a constructive method of handling the situation, which many communities face. It also has the advantage of contributing annually to our knowledge about the kind of people who apply for dispensary treatment and what needs to be done for or with them.

### Pay Clinics for Venereal Diseases

The Brooklyn Hospital, under the superintendency of Dr. W. G. Nealley, has just opened a pay clinic for genito-urinary diseases. This is held daily (except Sundays and holidays) from 5 to 6:30 P. M., these hours being chosen so as to make the clinic more available to working people than it could be if earlier in the day. A charge of $1.00 per visit is made. This includes medicine as well as treatment.

At the pay genito-urinary clinic of the Boston Dispensary, which was started about a year and a half ago, 50 cents a visit is charged, but medicine is extra.

The need of more dispensary clinics—pay as well as free—for treating venereal diseases, was considerably discussed at one of the recent sessions of the American Medical Association in San Francisco, and also at the National Conference of Charities and Correction at Baltimore last May.

This new clinic of the Brooklyn Hospital will be watched with much interest by dispensary men throughout the country.

### Efficient Dispensary Work for Mental Disease

The importance of out-patient work for those with mental defects or diseases, which has been brought out previously in this department, is well illustrated by the last report of the Boston State Hospital for the Insane in the section devoted to the out-patient department of the psychopathic branch of this institution.

Dr. E. E. Southard, the director, says: "The out-patient department has been managed as an integral part of the psychopathic hospital service to the great advantage of both. The clinic has increased numerically. As against 830 patients in the statistical year 1913, there have been 1,133 patients in the statistical year 1914. There have been nearly twice as many visits a month during the past year as in 1913. The increase has been in both sexes and in all classes. The volume of our work is indicated by the fact that no less than 338 special reports have been sent to social agencies and courts concerning cases.

"I need not stress the importance of this work. Sixty-three of the 1,133 new cases were admitted to the house service for observation or treatment, but in the majority of cases the medico-social questions could be answered without resort to internment; 322 cases belonged in the after-care division of mental hygiene.

"The extramural work of the hospital comes to a head in the out-patient department. It seems likely that this department will need progressively more funds as the years pass. It seems now as if there should be not merely a clinical historian, but a person to act as a manager of the clinic during its operation day by day, taking charge of the various inquiries from social agencies, courts and physicians.

"Follow-up statistics are available for ten and one-half months, serving as an efficiency study of our work. Since more than three-fourths of the patients due to arrive in the out-patient department come upon their own initiative (viz., 3,339 out of 4,046), it is clear that the institution is at least not a repelling force to the patients. About four-fifths of the out-patients have returned without reminders."

It will be noticed that 322 cases, or over 25 percent of the total number of new patients were the so-called "after-care" cases—that is, patients who had previously been in the Psychopathic or Insane Hospital and who needed supervision while continuing to live in their own homes. One-sixth of all the cases discharged from this Psychopathic Hospital during the year were given this after-care in the out-patient department of the institution.

The importance of the out-patient department to the hospital itself, as a feeder on the one hand and a follow-up service on the other, is well brought out. Still more important is its general service to the community as a place for diagnosis and care of incipient or developed mental disorders.

### Principles of a Follow-up System for a Dispensary[1]

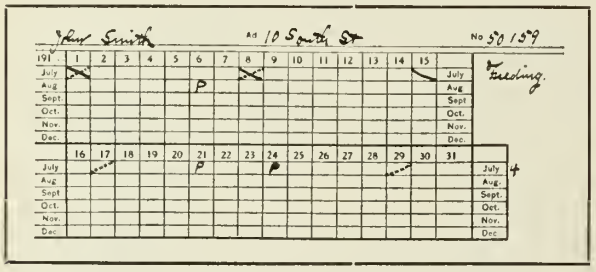
One of the important problems in dispensary work is what to do for the large number of patients who pay but a single visit when the nature of their ailment is such

[1]Extract from a forthcoming report of the committee on out-patient work of the American Hospital Association.

that repeated visits and further directions are necessary if any beneficial results are to be expected from the treatment prescribed. As an aid in the solution of the problem, a "follow-up system" has been devised and introduced in different dispensary departments, which has proven effective in largely diminishing this waste of effort and in securing fuller control over the course of treatment. While the method used in following patients must vary somewhat according to the special needs of each clinic, the general plan is as follows:

For each patient whom it is desired to follow up, a card is made out with the patient's name, address and number of his history. The card is ruled into small squares which are numbered from 1 to 31 across the top of the card, indicating the days of the month. At the left of the card the months of the year appear. By drawing a line in the proper square the doctor may indicate the date on which he desires the patient to return for treatment. This card is filed under the date indicated, either in a drawer or in an "Index Visible." When the patient returns, the card is again attached to his history so that the doctor may mark on it the date on which he wishes to see the patient again. If the patient fails to return, his card appears in the file at the close of the day. Usually after waiting for a patient from two days to a week, a postcard notice is sent to him, recalling his dispensary appointment and indicating a date on which the doctor will expect him. A postcard with a reply section attached may be used, on which, if it is impossible for him to return, the patient may reply and state how he has been since his last visit.

A form of follow-up date card is printed below.




Sample of follow-up card.

It has been found by experience in several dispensaries that about 50 percent of the patients respond to the first postcard; for the others more than one postcard, a personal letter, or a visit by a social worker may be necessary to secure results. The percentage of patients who never return varies from 10 percent to 30 percent. The amount of effort spent in securing the return of a patient should be determined by the doctor, according to the medical needs in each case.

### The Dispensary Versus the Hookworm

The work of the Rockefeller Sanitary Commission in the Southern States ought to be better known to hospital administrators throughout the country. It is of especial interest to those concerned with dispensaries.

When the Commission began its work in the study of the hookworm in 1910, surveys were taken in eleven states to ascertain the prevalence of the disease and to disseminate information about it among physicians and the lay public.

In different localities the prevalence of hookworm was found to vary widely, from 10 percent to 90 percent of the population being affected in different communities. The survey was thus satisfactory in showing the need for action; but as Dr. John A. Ferrell says in a recent article:[1]

"The record of cures was small. In December, 1910, Mississippi tried, for indigent cases, the dispensary plan that had worked so successfully in Porto Rico for the whole of the infected population. It was found to be very satisfactory in that state, not only for the indigent cases but also for all who applied. It was soon tried elsewhere, and speedily became in all the states the agency around which the chief activities centered. It provided a means for effective teaching by actual demonstration.

"It is still employed in some of the states, which are completing the work with aid from the International Health Commission, in a few of the heavily infected counties that could not be reached before Dec. 31, 1914, which marked the close of the five-year period covered by the pledge of Mr. Rockefeller to the Rockefeller Sanitary Commission. A summary of the work through the dispensaries and through the increased activities of the physicians showed, by the close of 1914, that much had been accomplished in the South in treating the disease. The number of persons microscopically examined was 1,273,850. The number of persons treated and reported was 694,516. Of these, 254,118 were treated and voluntarily reported by the physicians, and 440,398 were treated in the dispensaries.

"The population and area to be reached was vast; the funds, and consequently the size of the working force, was limited; the time for completing the work was short, and the county dispensary campaigns were consequently limited to periods ranging from four to eight weeks—a time insufficient to develop satisfactorily the sanitary features of the campaign along with the curative measures.

"Obviously, the next development in methods called for a lengthening of the working period; limiting the area to be worked, intensifying the efforts and putting into effect both curative and sanitary measures. This modified plan of work was very satisfactorily developed during the closing months of the Rockefeller Sanitary Commission, in dispensary work. It was completed before the close of 1914 in twelve communities, each having an area averaging in size about 32 square miles and an average population exceeding a thousand persons (1,025, to be exact). The working period in each averaged about four months. The work was done by a field director, who in some cases was aided by a microscopist. Of the 12,305 persons in the twelve communities, 75 percent were examined; 26 percent were found infected and 94 percent of these were treated and probably cured. Twenty-nine percent of them were actually reexamined after a course of treatment and all found to be cured."

In summing up this campaign, Dr. Ferrell says:

"Many observers state, however, that the by-products have greatly exceeded in importance the tangible results with hookworm disease as published in the records of the state boards of health, and in the reports of the Rockefeller Sanitary Commission. To give an illustration of this: It was found that the available funds for public health work in the eleven southern states where aid was given amounted in 1910 to $216,195, and in 1914 to $392,364, an increase of 81 percent in less than five years. Of course, the commission does not assume the credit for this increase; it was wholly voluntary on the part of the states. It may be, however, that the states were stimulated by the spirit which pervaded the forces devoted to measures for the control of hookworm disease. At any rate, the health departments are much stronger now than they were five years ago.

"One incidental service of the Rockefeller Sanitary Commission to the public health agencies of the South and the nation has been the bringing into the field of public health work of nearly one hundred carefully selected young physicians. The large majority of them have acquired a love for the work and an appreciation of the broad possibilities it offers for service to man. More than a third of them have chosen it as a career, and have identified themselves with the state or national public health organizations."

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Miss Ethel Butts, formerly superintendent of the Deaconess Hospital in Spokane, Wash., is in charge of the new Deaconess Hospital at Wenatchee, in the same state.

[1] Journal of the American Medical Association, June 5, 1915. Page 1889.

# SOCIAL HYGIENE
# VENEREAL DISEASES

Conducted by WILLIAM F. SNOW, M. D.,
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### Prostitution and Mental Deficiency

Of the multitude of environmental and hereditary factors that make the production of a prostitute possible, one is mainly hereditary: that of mental deficiency or amentia. The findings of various investigators who have tried to ascertain what proportion of prostitutes are aments or mentally defective show that the correlation between amentia and prostitution is sufficiently striking to demand more careful mental examination of preadolescents and more elaborate provisions for the discovery, training, and protection of children whose minds are not normally developed.

I. It is necessary at the beginning to make clear the meaning of the term "amentia," which is in use in England, but is less frequently heard in the United States. The terms amentia and dementia may be thought of as covering the general field of mental anomalies. Dementia, as the derivation suggests, indicates loss of the normal ability of the mind to function, and is due to disease or injury of the central nervous system. The term amentia refers rather to a condition in which the central nervous system has failed to develop normally and in which a consequent developmental defect in intelligence results. According to Tredgold, about 80 percent of cases of amentia are probably due to hereditary causes, the remaining 20 percent being caused by intra-uterine and early infancy injuries.[1]

II. The fact that the groups of prostitutes tested have been inmates of institutions, such as reformatories, prisons, and detention homes, means that a preliminary process of elimination has been gone through. It is safe to assume that, of the prostitutes in a given city, the dullest and least efficient mentally are the ones to fall into the hands of the authorities. Obviously the keen-minded woman is much less likely to be apprehended than her less intelligent companions. Her wits insure her safety. Consequently there is a larger proportion of aments among prostitutes in custody than among those who remain at liberty to ply their trade. It is also clear that the more strictly the police enforce the laws against commercialized vice, the more likely the efficient, intelligent prostitute is to suffer arrest. Similarly, in a city in which police regulation is very lax, only the extremely obtuse would be haled into court.

A second comment is necessary. Norms for women of the same social standing, education, employment, and age as those to which the majority of prostitutes have belonged before entering a life of vice, have not been established. That is, tests have not been made of a thousand scrub women and an equal number of factory girls, domestics, and similar types. It seems impossible at the present time to say that prostitutes are more or less intelligent than the whole group of women who, in the main, are of the same education, age, and efficiency as the prostitutes were before entering careers of professional immorality.

On the other hand it has been found that girls of a much higher intelligence and education than the average domestic or factory girl have failed to scale up to normal according to the Binet-Simon tests, which are most commonly used. Dr. Jean Weidensall gave the Binet tests to a number of Chicago Normal School girls, with the result that a large number failed to scale up to normal. She also gave the same tests to maids who had worked satisfactorily for several years at Chicago University, and to a similar group at Vassar College, and they also failed to scale up to normal. There could be no question, as a matter of fact, regarding the normality of these individuals. Prof. Robert M. Yerkes, of Harvard University, believes the Binet test to be unsuited for use in measuring the intelligence of post-adolescents. Dr. Frederick W. Ellis, of the Neurological Institute of New York, says: "Between using the scale with a group in such a way as to show the efficiency of any individual in the group as compared with the other members, and using it so as to bring about the formal designation of an individual by such terms as idiot, imbecile or moron, there seems to be the widest difference in spirit and in the result obtained.

"As a matter of fact, only a small proportion of the whole number (of girls from the New York Probation and Protective Association) were feeble-minded, in an unequivocal use of the term, such as might be taken to imply necessary residence in some one of the existing institutions. None were congenital idiots; only one was a true imbecile; and only a few were morons in the true sense of possessing a structure that is primitive, but still capable of being trained for primitive mental and physical tasks.

"On the other hand, almost all of them were pronounced variations from the standard types of individual and social efficiency. These variations were so uniformly present, and so pronounced, as to make it impossible to abandon the use of the familiar terms feeble-minded, idiot, imbecile, and moron, without trying to find some substitute form of classification."

III. Among the earliest scientists to call attention to the marks of degeneracy among prostitutes was Lombroso. His term "moral idiocy" as applied to prostitutes, is practically synonymous with the more specific terms "sociopath" and "moral imbecile," which are in common use among psychologists today. Lombroso was convinced from his observations that moral idiocy was the fundamental basis of prostitution.

Pauline Tarnowsky in *Etudes Anthropometriques sur les Prostituees* (1887), gives figures derived from measurements of fifty prostitutes in St. Petersburg. She found that 44⅓ percent had skull deformities; 42½ percent face deformities; 42 percent ear deformities; and 54 percent teeth deformities. About four-fifths of her cases were the offspring of alcoholic parents and about one-fifth were the last survivors of very large families. Simultaneously with her examination of fifty prostitutes, Tarnowsky also examined fifty peasant women of about the same age and mental development, and found the prostitutes showed shorter anterior-posterior and transverse diameters of the skull and "concludes from her researches, that the prostitute, as a rule, is a degenerate, being the subject of an arrested development tainted with a morbid heredity and presenting the stigmata of physical and mental degeneracy in full consonance with her imperfect evolution."

Bonhoeffer in Breslau examined 190 prostitutes in pris-

[1] A. F. Tredgold, 1908. W. Wood & Co., Mental Deficiency, p. 8.

ons and found that of this number 102 presented stigmata of degeneracy; and 53 were feeble-minded. In 1882 C. Andronico examined 230 Italian prostitutes and found that 20 had flat noses, 35 had handle-shaped ears, 10 had vicious implantation of the teeth, and 35 had receding foreheads.

E. S. Talbot gives the following results from examining 30 prostitutes at the Bridewell, in Chicago: 16 abnormal zygomatic process; 14 asymmetry of face; 3 mongoloid heads; 16 epignathic; 11 prognathic; 16 brachycephalic skulls; 13 mesticephalic skulls; 3 oxycephalic skulls.

The research of which Tarnowsky's work may be taken as typical is superficial compared with the more penetrating and exhaustive methods of the modern student. But from the foregoing figures one thing may be assumed to be true: prostitutes that have been examined, most often in prisons and detention homes and other custodial places, present a large number of the stigmata of degeneracy. Cranial anomalies especially have been observed. In one case in which a comparative examination was made of prostitutes and peasant women of the same age and mental development, the prostitutes were found to possess more physical deformities and less skull capacity than the women with whom they were compared.

IV. An investigation, which was made under the auspices of the Virginia State Board of Charities and Correction, presents a very high percentage of aments among the prostitute residents of the Richmond red-light district. Of one hundred and twenty persons tested, the examiner found forty-two or 35 percent to be imbeciles, and fifty-eight or 48.3 percent to be morons. That is, one hundred or 83.3 percent were mentally defective and only twenty or 16.7 percent were declared normal.

In the beginning of the investigation the examiner visited houses of prostitution of various types with a police escort and administered the tests to the women in their resorts. Later the examinations were made in the office at police headquarters. "An examination usually lasted from fifteen to twenty minutes," reads the report. "These were prolonged to at least half an hour, that a friendly footing might be established." The Binet scale was used in making the tests.

Commenting upon these figures the report reads: "And what does this mean? That of one hundred and twenty women only twenty are able to judge between right and wrong; that one hundred women need institutional care that they may be happy, decent, and self-supporting instead of miserable centers of vice and corruption and disease."

Serious as the condition indicated by this investigation may be, the fact that the examination of each individual was made in less than half an hour lays open to question the thoroughness of the examination. Many recognized alienists require, as a minimum, from four to six hours for examination before being willing to pass upon the subject's mentality. The investigation apparently did not take into consideration the family history of the prostitutes and there is no indication of a thorough physical examination to check and substantiate the results of the mental tests.

V. The physician of the Chicago Morals Court makes the following statement regarding the six hundred and thirty-nine prostitutes whom she had examined: "Over four hundred were mentally deficient, two were found to be insane, and sixty-eight little more than imbeciles, having mental capacities of less than a seven-year-old child." That is, approximately 62 percent of the six hundred and thirty-nine prostitutes were aments.

Other tests of women from the Morals Court were made by Dr. W. J. Hickson, of the Psychopathic Laboratory. The following results are for one hundred and twenty-six cases. "This included normal cases, borderland mental defectives, sociopaths, morons, dementia præcox cases, alcoholics, and drug habitues. Out of this group twelve or 9.5 percent were normal; four or 3.1 percent were borderland defectives; eleven or 9 percent were sociopaths; eighty-six or 68.2 percent were morons; five or 4 percent were cases of dementia præcox; six or 4.7 percent were outspoken alcoholics; two or 1.6 percent were outspoken drug habitues. In other words, 89.37 percent of our cases are feeble-minded or borderland. If we leave out the borderland cases it shows that 85.83 percent of our cases, exclusive of the insane, alcoholics, and drug habitues, are distinctly feeble-minded."

VI. The State Training School for Girls at Geneva, Ill., has a population of about four hundred, of whom a great majority have been committed for sexual immorality. Dr. Olga Bridgman reports that of one hundred and eighteen consecutive cases that were examined upon entry to the institution one hundred and five or 89 percent "were graded as feeble-minded; that is, they showed a retardation of three years or more; seven or 6 percent were backward, being one or two years retarded, and six or 5 percent were graded as normal." The Binet tests as modified by Dr. Goddard were used, "for the purpose of making a rapid estimate of the mental status of the children."

Fourteen of the one hundred and eighteen had been committed as "dependents or uncontrollable." Of the one hundred and four remaining, all of whom had been sexually immoral, one hundred and one were graded as feeble-minded and three as normal. According to the Binet tests, then, 97 percent of the children sent to this institution because of sexual immorality are feeble-minded.

"1. Of the one hundred and four girls committed to Geneva as sexual delinquents, one hundred and one or 97 percent were feeble-minded according to the Binet tests. This would seem to prove mental deficiency to be an important causative factor in the causation of sexual immorality and to indicate the routine employment of a mental examination for all children of this class in order to determine how far they may be held responsible.

"2. Of the feeble-minded, comparatively few are aggressive sexual perverts, but most are helpless victims, who should have protection, and who, under close supervision, may lead useful, contented lives.

"3. By no means all delinquent girls are feeble-minded, but probably those not amenable to supervision and direction in their own homes are largely so."

VII. One of the most painstaking scientific studies of the relation between amentia and prostitution was made by the Massachusetts Commission for the Investigation of the White Slave Traffic under the direction of Dr. Walter E. Fernald. The report of the committee in discussing the work upon the Mentality of Prostitutes reads as follows:

"A study of the mental condition of each prostitute involved the following inquiries: a physical examination of the woman; a study of the family and personal history, including moral and social reactions and standards, industrial efficiency, etc., as revealed by probation, court or institution records, or as described by the woman herself; the school opportunities enjoyed and the school grade reached; an informal examination to show ability to read and write, to add, multiply, and divide simple numbers, and to make simple arithmetical computations; simple questions to test practical knowledge and general information; inquiries as to associates, recreations, interests, etc. The inquiry generally was intended to demonstrate the woman's power of attention, judgment, common sense,

and native mental capacity, without regard to her school advantages or education."

The group of women tested were in the custody of prisons, a detention home, and industrial schools. One hundred prostitutes were taken at random from each institution and were tested as described above. The result of these tests is given in the following table:

MENTALITY OF PROSTITUTES

| | In Prisons. | In Detention House Awaiting Trial. | In Industrial School. | Totals. | Percent. |
|---|---|---|---|---|---|
| Feeble-minded... | 54 | 46 | 54 | 154 | 51.3 |
| Insane ..... | 4 | ... | 7 | 11 | 3.7 |
| Normal ..... | 42 | 54 | 39 | 135 | 45 |
| Total .....100 | | 100 | 100 | 300 | 100 |

Quoting the words of the report:

"The above table shows that of the three hundred prostitutes, one hundred and fifty-four or 51 percent were feeble-minded. All doubtful cases were recorded as normal. The mental defect of these 154 women was so pronounced and evident as to warrant a legal commitment of each one as a feeble-minded person or as a defective delinquent.

"The women in this group as a class came from shiftless, immoral, and degenerate families; they were industrially inefficient, as shown by the low wages received and by their inability to retain a position, even in unskilled callings; they were very deficient in judgment and good sense; they lacked ordinary general knowledge and practical information, as well as ability to perform simple computations, or to read or write except in the most elementary way.

"The general moral insensibility, the boldness, egotism and vanity, the love of notoriety, the lack of shame or remorse, the absence of even a pretense of affection or sympathy for their own children or for their parents, the desire for immediate pleasure without regard for consequences, the lack of forethought or anxiety about the future—all cardinal symptoms of feeble-mindedness—were strikingly evident in every one of the one hundred and fifty-four women.

"The mental inferiority of many of these women was masked by the glibness of tongue, the bold and confident manner, and the attractive physical appearance which are so often found in such cases. The general appearance and bearing of many would not suggest feeble-mindedness to an inexperienced observer."

As measured by the Binet scale the mental ages of the 154 women were as follows:

None had the mentality of a 12-year-old child.
10 had the mentality of an 11-year-old child.
67 had the mentality of a 10-year-old child.
50 had the mentality of a 9-year-old child.
19 had the mentality of an 8-year-old child.
8 had the mentality of a 7-year-old child.

In describing the prostitutes classified as normal the report reads: "The one hundred and thirty-five women designated as normal, were, as a class, of distinctly inferior intelligence. Some of the women seen at the Detention House were so under the influence of drugs or alcohol as to make it impossible to test their mentality. These drunken alcoholic and drug-stupefied women were all recorded as normal. * * * Not more than six of the entire number seemed to have really good minds."[2]

Few comments upon this work are necessary. It is thorough, accurate, and sound. The results are for three hundred women taken from three institutions, and this is undoubtedly the largest group of prostitutes that have been carefully studied in regard to mental condition. Dr. Fernald, in a letter to the writer, commenting upon this study, says: "I believe that the institution and court cases do represent to a certain degree the dregs of the prostitute class. In other words, there is a certain grade of the so-called high class prostitutes who are not mentally defective. You will note that we did not call many persons feeble-minded who would be so designated if the Binet scale were used arbitrarily. We have not sufficient data as to the rating, by the Binet scale, of the class of women of the same social scale as the immoral women tested to enable us to make definite statements."

[2]Report of Massachusetts Vice Commission. 1914, Legislative document.

VIII. In an article entitled Mental and Physical Factors in Prostitution, published in the *Women's Medical Journal*, July, 1914, Edith L. Spaulding, M. D., resident physician of the Massachusetts Reformatory for Women at South Framingham, Mass., gives a most interesting summary of the mentality of prostitutes in that institution.

The study includes mental and physical examination of two hundred and forty-three inmates of the Reformatory. In order to have proper background, inquiry was made into the educational advantages in each case. In doubtful cases or in cases where there were indications of amentia the Binet-Simon tests were used. The result of this work is shown in the following table:

| | | Percent. | |
|---|---|---|---|
| Mentality good .....55 cases | 22.6 | 34.5 | |
| Mentality fair .....29 cases | 11.9 | | |
| Mentality dull .....40 cases | 16.5 | 16.5 | |
| Mentality subnormal .....71 cases | 29.2 | 49.0 | |
| Mentality moron .....47 cases | 19.8 | | |
| Mentality imbecile ..... 1 case | | | |

As this table indicates, 49 percent of the prostitutes were subnormal or aments. This compares well with the 51 percent found by the Massachusetts Commission, mentioned in the preceding section.

Dr. Spaulding concludes that of the group under her observation all but 15 percent were either aments or were suffering from nervous disorders. In other words, 85 percent had been weakened in capacity to resist the temptations of everyday life. However, this 85 percent must not be confused with the 49 percent, the proportion of aments, which is the particular point of interest in this study.

IX. The Bureau of Social Hygiene of Bedford Hills, New York, has made careful and exhaustive studies of the physical and mental characteristics of immoral women, especially prostitutes, committed to the New York State Reformatory for Women.

It has been generally assumed that amentia is not remediable. The ament may be trained but cannot be educated in the scientific sense. Accordingly in an institution where many aments are under supervision there will be many who cannot improve to the point of being able to direct their conduct successfully in ordinary community life. The Bureau of Social Hygiene observed that many of the women committed to the Reformatory were actually reformed, and on the other hand that many were undoubtedly feeble-minded. Accordingly Dr. Weidensall administered the Binet test, as revised by Dr. Goddard in 1908, to two hundred women as they came in sequence from the courts. It was found that only 0.5 percent could pass the twelve-year-old test.

Dr. Weidensall says:

"Inasmuch as a fair percent of this number were bound to prove reformable if the practical experience of the institution was to be relied upon, we must needs conclude either that the feeble-minded were reformable or that the tests, at least as applied to the criminal woman, were inadequate."

In George J. Kneeland's *Commercialized Prostitution in New York*, Dr. Katharine Bement Davis gives the results of the Binet test as applied to one hundred and sixteen of the six hundred and forty-seven inmates of the New York State Reformatory for women: Of these women forty-four or 37.9 percent were unhesitatingly

pronounced mentally defective; seventy-two were doubtful. The total number of women under observation was six hundred and forty-seven, of whom one hundred and ninety-three or 29.8 percent were "decidedly mentally defective."

In a recent publication of the Bureau of Social Hygiene the first hundred cases studied by the Bureau were summarized under the following heads: age, offense, physical characteristics, mental characteristics, family, recommendation as to disposition of case, and disposition of case.

The hopeful aspect of the situation is the indication that training and medical attention would undoubtedly improve a large portion of these cases.

The question arises, "Are the physical and mental anomalies, characteristic of a large number of these cases, due to a life of prostitution, or is the immorality of the women due to physical and mental defects and diseases?" Probably the truth lies between the two alternatives, the causes and effects being interactive.

X. Tabulated summary of the above studies of relation between prostitution and amentia:

| | Number Prostitutes Examined. | Percent Aments. |
|---|---|---|
| State Board of Charities and Correction, Richmond, Va. | 120 | 83.3 |
| Chicago Morals Court | 639 | 62.0 |
| Chicago Morals Court | 126 | 85.8 |
| Illinois Training School for Girls | 104 | 97.0 |
| Massachusetts Vice Commission | 300 | 51.0 |
| Massachusetts State Woman's Reformatory | 243 | 49.0 |
| New York State Reformatory for Women | 193 | 29.8 |
| Bureau of Social Hygiene | 100 | 29.0 |
| Total | 1,825 | |

In all, 1,825 cases have been tested, the results ranging from 97 percent to 29 percent of aments among the persons tested. The surprisingly wide variation in the figures given above indicates a great difference in the methods used and in the interpretation of results. Undoubtedly the type of prostitute found in New York and examined at Bedford is about the same as that found in Chicago and examined by the Chicago Morals Court. The difference lies in the examiner and his or her method and interpretation. Such results leave the student in an unsatisfactory situation. The question still remains, "What proportion of prostitutes are mentally defective?" It would be possible to strike an average from the percentages given above for the 1,825 cases, but such an average would be obviously useless, for it is manifest that 29 percent and 97 percent cannot both be correct. The point seems to be that a moron is one type of person to this examiner and another type of person to that examiner. Those figures may be taken as most reliable which are secured by the most expert diagnostician, having the subject longest under observation, and penetrating deepest into the family and personal history and the physical condition of the subject.

In conclusion, the points of importance which emerge are as follows: 1. There is a great need for the establishment of norms for women of the same general industrial class as that to which prostitutes have belonged before becoming prostitutes, in order that comparisons may be made. 2. There is a need to study carefully a large number of prostitutes who have not undergone the initial process of elimination in the courts. 3. The whole correlation between prostitution and amentia is still undetermined. The most accurate and conservative studies thus far made indicate that about one-half of the prostitutes who come into the custody of city and state institutions are mentally defective. W. C.

## HINTS FOR HOSPITAL SUPERINTENDENTS.

In some hospitals books of efficiency are kept for all employees. One such book is kept for the interns, one for the nurses, one for the common help. Good deeds as well as delinquencies are kept in the account. A scheme of this sort makes it possible to lay the whole story of an employee's service on the table in the event that something of importance to him or her comes up for consideration. And such an evaluation would be independent of changing superintendents or other high officials.

Superintendents should discourage their heads of departments from stopping them in the halls or as they pass through the building, to give them important information, or information that should go into the records. Heads of departments should be schooled to bring their reports to the superintendent's office at certain fixed hours, and the superintendent should never be too busy to give plenty of time to these people for consideration of their department business. Nothing so discourages officers in the hospital as a listless, careless and inconsiderate attitude on the part of the head of the house, and they soon get into the same habit themselves.

How many hospital superintendents, off hand, can tell just how much their hospital must earn daily to be on the right side of the ledger? And yet every hospital has a maximum earning capacity, and a pretty definite expense figure. It should be possible for every superintendent to tell, after breakfast in the morning, when yesterday's report is laid before him, just how he came out for the past twenty-four hours. It may be that you expect a deficit, but, at any rate, you should know just what the deficit has been. In some hospitals it takes an annual report to tell the superintendent how his finances are. That kind of a report isn't worth very much because it doesn't help any in administration from day to day.

Now is a good time of the year to look into our asepsis a little bit. Perhaps infections are not more likely to occur in the summer than in the winter time, but every season is a good season to think about extraordinary precautions against preventable infections. Better inquire whether there have been any infections in the surgical wards and in the maternity wards recently, and while you are about it you might try to locate any of these that have occurred. Most hospital infections are preventable, and more than half the time a careful inquiry will discover the source of whatever infections there may have been lately. Infections cost money and delay, and jeopardize the recovery of patients, and give the hospital a bad name—besides, it is wicked to have them.

Not one single well person should be housed in the hospital building. The average private room in a fireproof hospital building costs about $3,000 to build and rents for an average of $1,200 per year. You can rent accommodations outside, dwelling houses or flats, to house a dozen employees, for one-half the rental price of one private room. I know one hospital in which eleven persons were housed, each one in a private room. The hospital had to turn away private room patients, and had a full-grown annual deficit. A flat was rented for these eleven people, for $35.00 per month. Within thirty days those eleven rooms were bringing in $275.00 per week, or at the rate of $14,300 per year. Besides, well people, living in the hospital, prowl about when they are not on duty and get into mischief.

# NEW INSTRUMENTS AND APPLIANCES

VINCENZ MUELLER, Technical Editor.
GEO. W. WALLERICH, Associate Editor.

## A Simple Anesthesia Apparatus

Dr. Benjamin Morgan, of Chicago, has designed an anesthesia apparatus which seems to have many good qualities, minus some of the often too complicated attachments which are found in ether apparatus that is designed for ether vapor inhalation. Some of the features claimed for this device are:

Ether vapor may be produced in proper proportions, with fresh air for each respiration.

No unvaporized ether enters the patient's respiratory tract.

The vaporizing temperature may be attained before the ether enters the respiratory tract.

The entire quantity of ether vapor may be utilized by the patient and is not distributed in the room.

Resistance to inspiration and expiration are at a minimum.

The apparatus illustrated consists of a vaporizing chamber having approximately 36 square inches of evaporating space and 300 cc. capacity. At the top of the chamber or container are placed two valves. One of these is an intake for fresh air, the stream of air passing against the surface of the ether; the other valve is the outlet for vaporized

Morgan Ether Vapor Apparatus.

ether arising from a point midway of the surface of the chamber. In addition a suitable inlet is arranged for replenishing the ether. Attached to one side of the container is the usual flexible tube provided with a face-piece or inhaler.

Certain changes have been made in the inhaler so as to adapt it better for this particular type of anesthesia apparatus. The valve works in but one way, opening outward, thus preventing the patient from rebreathing; this feature is declared by Dr. Morgan to be of very considerable importance. A valve is also attached to the face-piece so that the amount of fresh air entering may be regulated.

Pure ether (or chloroform) is poured into the vaporization chamber to a depth of about 1 centimeter. With the ventilator in the inhaler wide open, the mask is placed snugly over the patient's face. (No anointing is necessary, as no unvaporized ether will touch the skin). As the patient becomes accustomed to breathing the vapor, the ventilator is gradually closed, permitting the gradual entrance of an increasing amount of ether vapor. When complete relaxation is attained the ventilator may be opened a little, and a uniform degree of anesthesia maintained over long periods without further regulation of the apparatus other than an occasional adjustment of the ventilator as may seem to be indicated by the patient's degree of anesthesia.

With a few slight modifications the apparatus can be adapted for nose and throat work in a way that will be

Showing application of Morgan Ether Vapor Apparatus.

greatly appreciated by the nose and throat surgeon. These operators realize the difficulty of obtaining satisfactory anesthesia, and to them the ordinary methods are a bugaboo. This apparatus is modified for the purpose and, among other things, substitutes a bent tube for the mask inhaler, so that a perfectly steady anesthesia of any required depth can be maintained for any length of time with no obstruction whatever to the field of work, and no retching or choking to interfere with the proceedings.

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## Infant Specimen Urinal

BY DR. C. R. SPICER,
Children's Memorial Hospital, Chicago.

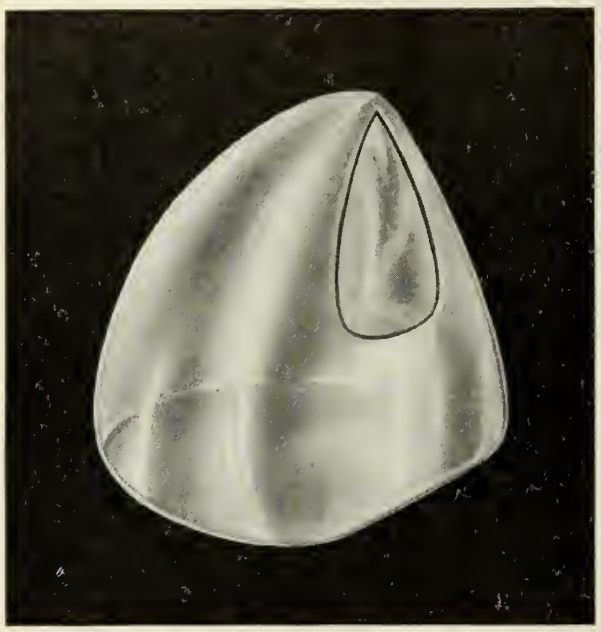
There has been a long felt want for a simple device for procuring specimens of urine from infants for mechanical and microscopic examinations, with the least amount of discomfort to the little patients and inconvenience to the attendants.

The devices which have been in use up to now are more or less unsatisfactory because they are troublesome to apply and the specimen cannot always be secured uncontaminated by feces. Therefore, we believe that the new specimen urinal devised by Dr. Spicer will be welcomed by the profession, especially in hospital practice.

The device is made of moulded glass of the proper thickness and will withstand any ordinary stress. It has two plane surfaces; one of these rests against the patient when applied and on the other it stands when not in use. An opening of proper size and shape is located toward the upper end of the plane that rests against the body so as to admit the penis or to cover the vulva, admit the urine and at the same time exclude the feces. The other side

of the device is convex and when in use is covered and held in place by the diaper only, nothing else being required for this purpose.

The little patient can be allowed entire freedom of movement, as, owing to the shape of the urinal and the location of the opening, it does not matter whether the child lies on its back, its side, on its face, or in a sitting or standing position; if urine is discharged it will be collected by this device. When the diaper is removed the urinal always remains right side up.



Spicer Infant Urinal.

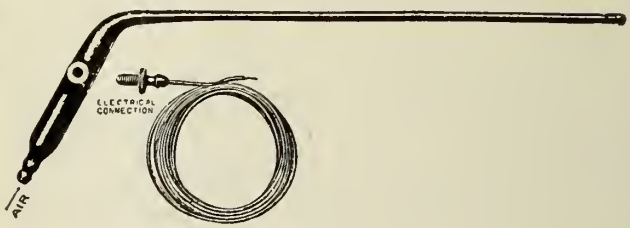
At the Children's Memorial Hospital in Chicago, where the urinal has been in use for some months, it has fulfilled all the requirements that may be expected of such an apparatus.

### Fulgurating Electrode for the Larynx.

Dr. Sidney Yankauer, of New York, has produced the electrode here illustrated for the reason that heretofore there has not been available a satisfactory electrode for this purpose.

Fulguration of papillomas is now an established procedure, and very satisfactory results have followed the use of this method in numerous cases. The principle is quite well known. Briefly, it consists of applying a high-frequency current, of suitable quality and strength, to the growth for a few seconds. The growth is then allowed to slough off.

The success of the fulguration method depends largely upon delivering the current, through a small conductor, direct to the growth to be removed. For instance, in laryngeal work, if the conductor or wire carrying the current gets in contact with the tissues, a short circuit is established and the spark is extinguished. To overcome these difficulties Dr. Yankauer has made his electrode with several novel features. The Yankauer electrode consists of a hard rubber tube bent to form a handle, of appropriate shape and dimensions, to be used conveniently with the direct laryngoscope, or with the suspension laryngoscope of Killian or Lynch. The interior of the tube, from the tip to a point on the handle near the bend, is lined with a metal tube to act as a conductor. The distal end is closed, but near the tip of the instrument a small opening, about 1 mm. in diameter, has been drilled through the hard rubber insulation and through the wall of the metal lining. At a point on the handle near the bend there is a threaded hole and at its bottom a piece of metal in electrical connection with the metal lining. Into this hole a hard rubber screw is fitted, which carries the conducting cord. The electrical conduction extends from the connection near the bend to the bottom of the small hole near the tip; the lumen extend from the end of the handle to the small hole near the tip. To the end of the handle a rubber tube is attached, through which compressed air at a pressure of about fifteen pounds is delivered.




Yankauer Laryngeal Fulguration Electrode.

To use the electrode, it is first introduced into the trachea and a small amount of air at a low pressure is blown into the trachea so as to blow out any ether vapor which may be present. The tip is then brought out into the larynx, the full air-pressure turned on first and then the spark. The rubber insulation prevents the tissues from coming in contact with the conductor. The air-current blows away any secretion which may cover the growths and at the same time separates the individual tufts of the papilloma, so that the spark can reach the base of the growths. It dilates the ventricle of the larynx so that its interior becomes accessible. By rotating the instrument any part of the larynx can be treated.

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### Kimpton-Brown Blood Transfusion Tube

Many types of blood transfusion instruments have been designed during recent years, but as this method is becoming more popular and being resorted to more frequently, new devices make their appearance from time to time.

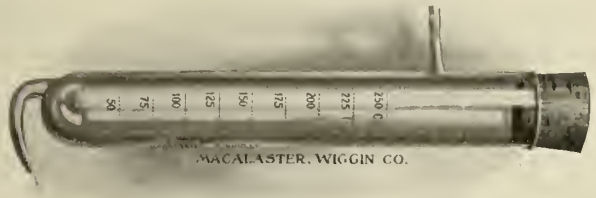
The fact must be conceded that blood transfusion instruments are a necessity in every well equipped hospital. The fact that the Kimpton-Brown tube is very simple in construction should make it interesting to the surgeon and hospital superintendent.

As will be seen in the illustration, the transfusion tube is made in the shape of a cylinder. When the tube is lying on its side, the lower end of the cylinder is closed except for a cannula attached to one side of this end, and so placed that when in this position the cannula will lead from the upper side of the cylinder. This bends at right angles to the axis of the cylinder and side tube, and downwards. The last bend of the cannula is about 2½ inches long, tapering gradually to a beveled and burnished point about 2 mm. in diameter. The taper is such that the point will readily slip into a vein with proper manipulation. The opposite end of the cylinder is closed by means of an ordinary cork stopper. Just below the stopper a side arm leaves the cylinder. The tubes are made in two sizes, 100 c. c. and 250 c. c. Both sizes are carefully graduated, so that one can instantly see the amount of blood in the cylinder.

A few words concerning the handling of transfusion

tubes of this kind may not be amiss. Before use, the tubes should be carefully cleaned. This may be done by means of a swab of gauze, and some soap and warm water. Thoroughly cleanse the tube; then run some hot water through it, rinse out with alcohol, and later a few drops of ether.

They can be sterilized safely by wrapping in sheet wadding, winding in a towel, and sterilizing in the autoclave,




Kimpton-Brown Transfusion Tube.

in a manner similar to that of dressings. Tubes should be coated before use with paraffin, or some similar material. The tubes are easily coated, provided they are first heated equally, then the heated paraffin poured in, and the tube rotated, the excess mixture being allowed to run out through the cannula. The cork stopper should be coated as well, the paraffin aiding to keep the tube air-tight.

## NEW YORK BROADENS HEALTH WORK

### Boys of the District to Form League—Storekeepers' Conferences—Police Cooperation—Advisory League of Physicians

The New York City Health Department has conceived a scheme by which a number of civil agencies are to be enlisted in local health work. Some months ago a district in the densely populated part of the city was set apart as District No. 1, in which experimental work was to be done, the intention being to take up other districts as the work became standardized.

This district is now to take up local health problems under the following schedule:

#### BOYS' HEALTH LEAGUE

In order to fully develop in the younger generation a sense of responsibility for local health conditions, a "Boys' Health League" has been formed upon a military basis, with a captain and three lieutenants in charge of a square block, these, in turn, placing one boy in charge of a house, the whole district thus being effectively covered. This League has its own elected officers, and is supervised by one of the school teachers, who is the executive director, and by the Medical School Inspector, who acts as the medical director. This organization is being used to take a periodical census of the district, to distribute the monthly bulletin and other literature and will cooperate in every way with all city departments that can be utilized for the improvement of local health conditions, each department, in turn, delivering to the League short talks on the subject of cooperation with their respective departments. These boys all belong to the 7th and 8th grades of Public School No. 62, so that the benefits of graduating yearly a class of "Health League" boys is very manifest. The formation of an alumni of "Boys' Health League" is the next logical step.

#### CONFERENCES WITH STOREKEEPERS

A new method of dealing with those who handle and sell food has been introduced. Conferences with various groups of storekeepers are being held for the purpose of instructing them in regulations relating to their business. A Food Inspector gives them a short talk in their own language and answers the questions which they are encouraged to ask. The success of these conferences can best be judged by an attendance of sixty out of a possible seventy-five ice cream and candy storekeepers, and forty-five out of a possible sixty butchers. Hand in hand with this there has been a reduction in the number of violations found and summonses issued.

#### POLICE COOPERATION

A plan of police cooperation is being developed, by means of which patrolmen on duty will do actual Health Department work. A systematic course of instruction by means of short talks to outgoing platoons has been inaugurated, so that the uniformed force will be familiar with any work given them. Assignments to the patrolmen will consist in the enforcement of quarantine, in placarding, seeing to it that funerals in contagious diseases are private, and in cooperating with sanitary and food inspectors regarding violations of the Sanitary Code. When fully developed, this phase of "Police Health Work" will be a very important adjunct of Health Department administration.

#### PUBLIC HEALTH EDUCATION

In order still further to promote health education of the people of the district, lectures are arranged for public schools and recreation centers, articles are prepared for the local school periodicals, as well as for the Jewish newspapers circulating in the district; a bulletin board, maintained in front of headquarters, carries announcements and health epigrams; a health exhibit is shown on the walls of the rooms at the Health Centers' headquarters; health leaflets of various kinds are distributed, and altogether all effective methods of health education are utilized. A local monthly periodical, called the "East Side Chronicle," is being published for this district. It contains timely health articles and local news. A copy of this paper is distributed free of charge to every family in the district.

#### ADVISORY LEAGUE

An Advisory League of physicians, social workers, etc., has been formed and periodical meetings are held for the purpose of discussing plans for the improvement of health conditions of the district. One of the prominent social workers has voluntarily undertaken the handling of all of the relief work occurring in the Health Department work of this district.

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An odd bequest is made in the will of the late William Bradford Weston, of Milton, Mass., who leaves two trust funds of $6,000 each, which are to be set aside and permitted to accumulate for 100 years, when they will be used to erect hospitals in the towns of Milton and Duxbury. The hospital in Milton is to be a memorial to Mr. Milton's wife, while the institution to be established in Duxbury will be known as the "King Cæsar Hospital," in memory of his great-grandfather, Ezra Weston, who was commonly known as "King Cæsar."

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The Portland and Vindicator mining companies, of Victor, Colo., are cooperating with their 1,500 employees in a project to erect and operate a hospital. The plan is designed to supplement the workmen's compensation act, which the mine owners believe to be weak in certain particulars. The Portland and Vindicator plan will cover accidents not occurring during actual employment, and provide benefits for the first three weeks of accidents, something the new law overlooks. The companies will put up dollar for dollar with the men, who will give one percent of their monthly wages.

# THE HOSPITAL KITCHEN

Any questions regarding equipment or other matters connected with the kitchen and dependent departments of food storage and service will be answered in this department. Address communications to The Modern Hospital, Kitchen Department, Metropolitan Building, St. Louis.

## Mechanical Potato and Vegetable Peeling

One of the preventable items of waste in the kitchen is the peeling of potatoes and other vegetables. Various reliable tests in large establishments show conclusively that mechanical peeling of potatoes will effect a saving of from 15 to 25 percent of the potatoes, besides doing away with a considerable amount of labor. The rapidity of action is another feature, a batch of potatoes being run through in less than a minute. Obviously the eyes and abrasions in the potatoes cannot be taken out except by hand, without a large amount of waste, but as only large eyes need be considered the short space of time necessary to do this is negligible.

There are several peeling machines on the market. The principle of all the best is a disc bottom revolving rapidly and thus by centrifugal force throwing the potatoes against itself and the circular stationary sides of the apparatus. This disc and the sides of the cylinder are coated with an abrasive substance such as chipped flint or carborundum, and the potatoes are thrown against this and the skin is rubbed off in a short time.

Some machines have the abrasive substance on the bottom disc only, and naturally cannot operate as rapidly or evenly as those having both sides and bottom operating on the vegetable.

The machines are made for hand power or for belt and motor. Hand power is not to be recommended, owing to the difficulty of maintaining a high and even speed. As the time of operation is short the amount of electricity used is negligible for a power machine.

In choosing a peeler the main things to see to are that the motor is in a position where it will not get wet and short circuit; that the abrasive material has the highest cutting and lasting qualities and is attached to the disc and cylinder in a way to secure the maximum of adhesion, and that the moving parts and abrasive parts are easily removable for renewal when worn out.

Whenever more than two bushels of potatoes are consumed daily it will pay to instal a peeler. An average 20 percent saving in quantity can be looked for over the hand peeling as practiced by the general run of kitchen help.

The handling of the peelings when removed by hand means the accumulation and handling of a considerable amount of garbage. With a mechanical peeler the peelings, being of the consistency of sawdust, are carried away into the sewer by the stream of water constantly running through the machine. Small potatoes which are ordinarily thrown away are peeled easily in the mechanical peeler and another cause of waste stopped.

It will be found that the initial cost of a vegetable peeler will be saved within a reasonable time in the amount of vegetables saved alone, besides minimizing one of the protracted operations of the morning in the kitchen, and doing away with a large amount of garbage.

## Kitchen Ventilation

BY P. B. SCHWEIKERT

The atmospheric conditions under which kitchen help are forced to labor are in too many instances outrageous, the more so that there is absolutely no necessity for such conditions to exist when the knowledge of how to prevent them is easily obtainable.

The principles which apply to the ventilation of a building have to be modified to a great extent in order to get results in the kitchen. The cardinal principles which must be followed are in reality simple but are very often entirely forgotten by those designing the kitchens of hospitals as well as other buildings.

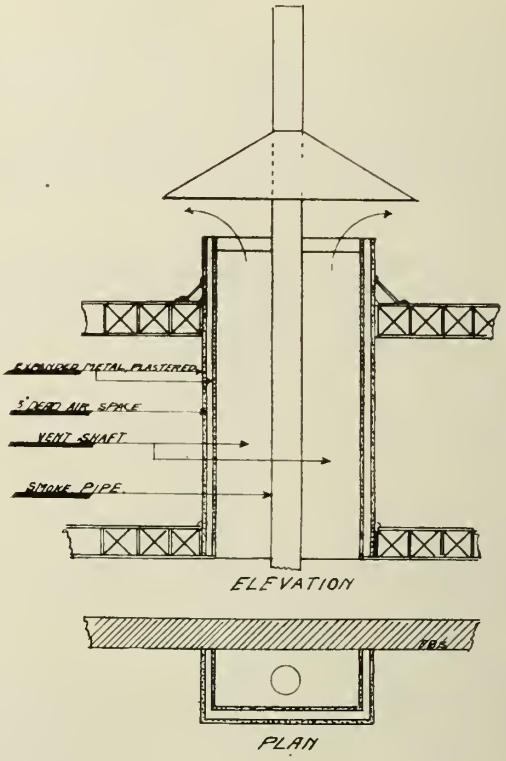


Fig. 1.

It is not practical nor safe, for example, to conduct the vent from the canopy over the ranges into the same flue as the smoke from the ranges, nor can one expect the vapors from the ranges thus to be carried away successfully. It is unsafe inasmuch as the heat from the smoke flue may ignite accumulated grease in the vent pipe.

Open windows will not carry off the vapors from the cooking except to a very small extent. Blowing air into the kitchen will not take away the vapors or lessen the heat in front of the ranges.

Yet all these things are done in practice and the sufferers are, first, the kitchen help, and second, the employers, who have to put up with constant changes of help owing to the uncomfortable conditions created.

There is one basic principle, and only one, governing the removal of the heavy, grease-laden vapors generated in a kitchen, which, because of their weight, do not readily rise; that principle is that they must be assisted by being

pulled out, and cannot be pushed out. This pulling out cannot be accomplished except by artificial means, no flue, however large, being capable of accomplishing it successfully unless an artificial impetus is furnished.

There are two means of drawing out the kitchen vapors: one a fan and the other heat in the flue. The size of the flue necessary to carry off the vapors is very important,

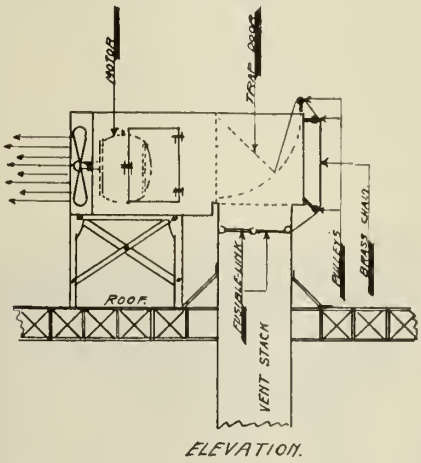


Fig. 2.

and in general practice it will be found that the size necessary is underestimated by architects and even by kitchen equipment designers.

It is important to remove the vapors through the flue directly from the spot at which they are created, and they should never be pulled across the kitchen except in a closed duct. In many cases the exhaust fan is placed on

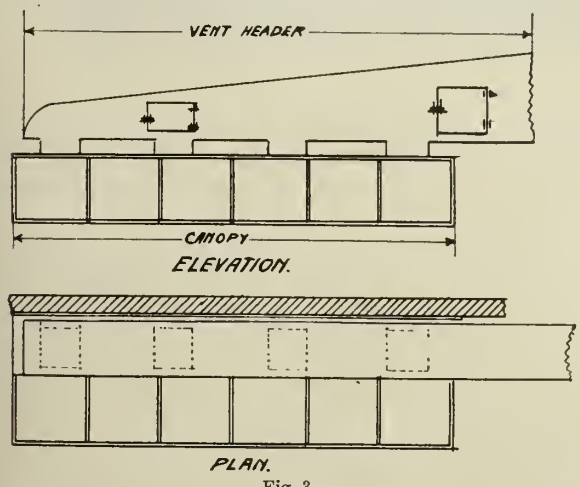


Fig. 3.

the opposite side of the kitchen from the ranges, which results in the heat from the ranges being pulled across the kitchen, superheating the air as it goes, because no canopy and duct have been provided.

In case there is no canopy the heated air and vapors are simply pulled to wherever the exhaust opening is located, heating up the kitchen in passing and leaving a coating of grease on anything the air happens to touch.

The placing of an exhaust fan in the wall of the kitchen results in the vapors being carried to the windows of the floors above the point of exhaust when the wind is in certain directions, or there is no wind; therefore it should always be carried to the roof, the fan being placed in a suitable fan house on the roof.

The simplest and least expensive method of kitchen ventilation is that shown in Fig. 1. The flue from the ranges is run up the center of the vent flue connected with the top of the canopy. The heat generated from the ranges causes a suction draft which carries off the air in the vent flue surrounding it. It is, however, essential that the smoke flue be of the right size to give good draft and especially that the vent flue have the requisite number of square feet of area to take care of the vapors generated from the particular apparatus in use.

Of course this system varies in its pulling capacity according to the temperature and barometric pressure of the outside atmosphere, but if the vent flue is of sufficient capacity it will give as good results as can be obtained without the use of mechanical ventilation. To get the best results the vent duct must go to the roof and be above surrounding buildings.

Whenever any wood or other inflammable material is present the vent duct must be carefully fireproofed because the grease which accumulates in the duct will occasionally take fire.

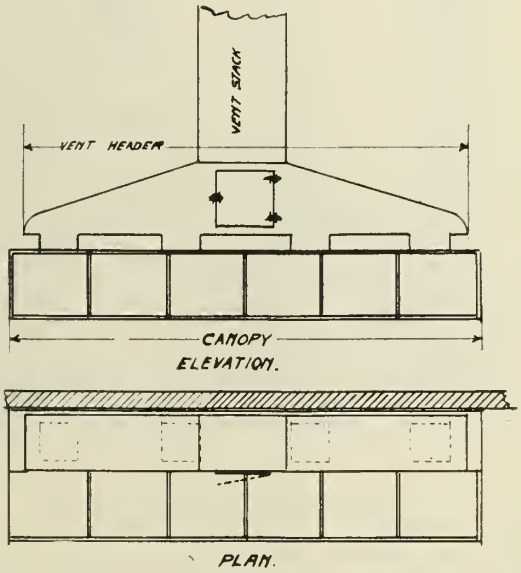


Fig. 4.

The building of vent ducts of wood lined with iron or asbestos is certain to cause a fire in time and must never be considered. The fire which destroyed the Chamber of Commerce Building in Cincinnati a few years ago was caused by a duct of this description.

Fig. 2 shows the best construction of a vent flue operated by an exhaust fan, which is the only absolutely sure method of obtaining the same ventilation under all atmospheric conditions. The exhaust fan must always be placed at the extreme end of the vent duct and the outlet must be in free air and not up against a wall or some similar obstruction, because the air rebounds and causes the fan to run in its own vacuum.

When the fan is located on the roof it should be installed in a fireproof house and the end of the vent pipe should contain a drop door with fusible link to divert flame, in case of fire, to an open, unobstructed passage; this drop door should also break the electric current to stop the fan.

Figs. 3 and 4 show the canopy and vent header con-

nected to the flue at the end and center respectively; both are applicable to canopies over 10 feet in length.

The vent header plays an important part in the ventilating scheme, because it really acts as a reservoir, taking care of sudden excesses of vapor such as are generated by spilling grease on the range.

The size of flue and exhaust fan necessary for the perfect ventilation of any given kitchen is dependent upon the ceiling height, the number and size of windows and the number and class of fixtures to be ventilated; consequently it is not possible to give any general table of flue sizes. In the series of articles to follow this one, with plans of kitchens suitable to various sized hospitals, the flue sizes will be given so that a general idea can be formed as to what is necessary in the average case.

### English Nurses in the Balkans

More than a year ago the astounding information came over the wires that the Serbian army was afflicted with an epidemic of typhus fever in a most virulent form. The disease spread over practically the whole of southern Europe, entered the Austro-Hungarian army, reached out into the Balkans and attacked the Russians, then engaged in their herculean Carpathian campaign. The nations were so busy destroying each other that they had no time to attack even a common enemy, and it was left to the United States to do what could be done. Dr. Richard P. Strong, of Harvard University, and a corps of able assistants were dispatched to Servia and then began one of the most spectacular, heroic and successful fights against one of the deadliest diseases that ever afflicted humanity.

A group of English nurses at Uskub, Serbia, in their new lice-proof uniforms as protection against typhus fever.

The Rockefeller Foundation and the American Red Cross divided an expenditure of more than $100,000, and today the fight has been won and the disease has been entirely suppressed.

It was known that typhus was communicated by means of the common body louse. Among the many nursing groups sent to Serbia to help in the fight on the disease was a group of English nurses. The above illustration shows them in the costume designed to exclude the infecting louse. Notwithstanding the many precautions taken a number of American physicians and nurses have died of the disease.

While this fight on typhus was being waged by a heroic group of American doctors and nurses, Dr. Harry Plotz, of the laboratory of Mt. Sinai Hospital, New York, working on the microorganism of typhus, succeeded in identifying the organism with that of the so-called Brill's disease, which he found was typhus in a modified, or attenuated form, Dr. Plotz succeeded in making an immunizing vaccine, and now all the workers against typhus in the Balkans have been vaccinated against the disease.

### How to Treat Ward Floors

To the Editor of THE MODERN HOSPITAL:

I am just finishing up an additional wing to our hospital and am at a loss to know how to finish the floors. They are vertical grain yellow pine. Last year similar floors were shellacked and varnished with Berry Brothers' varnish. These have worn off badly, and the finish in general has not proved durable. Is there anything better that you can suggest? I would appreciate an answer by return mail, as the floors will be ready for treatment next week.

With best wishes for the prosperity of our journal,

FRED W. PHIFER, M. D.,
Wheatland Hospital, Wheatland, Wyo.

I am quite sure your trouble has been that you have laid a heavy coat of shellac on your other floors and there is no binding force to this kind of treatment. Your first course should be a very fine varnish; Berry Brothers' product is all right, and if you will thin the first coat down with turpentine until it is very thin, so that it will run into the pores of the wood, you will not have the trouble you had before. Then your second coat should be the varnish as it comes from the can. If you will use this method I am sure you will have better success this time.

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Miss Anna C. Farley, of Chicago, became superintendent of the John Warner Hospital at Clinton, Ill., August 2.

# THE MODERN HOSPITAL

*A Monthly Journal Devoted to the Building, Equipment, and Administration of Hospitals, Sanatoriums, and Allied Institutions, and to their Medical, Surgical, and Nursing Services*

Vol. V *October, 1915* No. 4


## REQUIREMENTS OF MODERN CONTAGIOUS DISEASE HOSPITALS

### Plans of Permanent and Temporary Structures to Meet Varying Conditions—Two Examples of This Architecture With Special Details for Each—Arrangements for Light, Heat and Service


By FREDERIC W. SOUTHWORTH, B. S., Architect, Bureau of Yards and Docks, Washington, D. C., and LUCIUS W. JOHNSON, D. D. S., M. D., Passed Assistant Surgeon, U. S. Navy


PROVISION for isolation of the patient and disinfection of his effects is the distinctive feature of a contagious disease hospital. Ideal isolation should begin at the moment a patient enters the hospital and continue until he leaves and should extend to the persons attending him as well as to the dishes, bedding and other objects with which he comes in contact. That such elaborate isolation is necessary or altogether desirable is a debatable question, and the excellent article by D. L. Richardson (The Modern Hospital, Vol. I, No. 2, p. 76) affords some strong arguments on the negative side.

The accompanying illustrations show two types of contagious disease hospitals, one of permanent and one of temporary construction.

#### HOSPITAL OF PERMANENT CONSTRUCTION

The plans submitted herewith for a hospital of permanent construction provide for isolation from the time the patient leaves the elevator after admission to the time of entering the elevator on discharge, the elevator and other neutral spaces being so constructed and furnished as to facilitate and simplify disinfection either by gases or solutions. Each ward has its own eating utensils, which remain in the ward. Containers in which food is sent up on the dumbwaiter are boiled in the ward diet kitchens, the metal basket containing them is removed from the sterilizer and placed, without drying, on the dumbwaiter, which goes to the central kitchen. Linen is placed in canvas bags and sent down on the elevator, or else placed in the chute leading to the basement; in either case it goes then to the disinfector and, after disinfection, is taken out into the clean room and sent to the laundry. Sputum cups, gauze and other waste are burned in the incinerator with which each ward is equipped.

Certain features will be necessary if the structure is to act as an independent institution, but will not be required if it constitutes a unit of a general hospital. These features, such as laundry, pharmacy, and heating plant, are placed in the basement, and their presence will have little effect on the general design.

The main building is three stories high, with a basement under a portion of it. The basement is large enough to give space for pharmacy, locker room, elevator machinery, stores and disinfectors. The first story contains nurses' quarters, waiting, examining, dressing and toilet rooms, serving room and laboratory. The second and third stories are practically the same and contain the wards and their tributary rooms. Each ward unit provides:

Ward, capacity 8 to 12 patients.
Two quiet rooms, capacity 3 patients.
One nurses' room with toilet.
One diet kitchen.
Two linen closets.
One main toilet and cleaning gear room.
One independent stairway.

There are also two additional rooms, one on the second floor and one on the third floor, that can be used for the doctor and the head nurse, or oth-

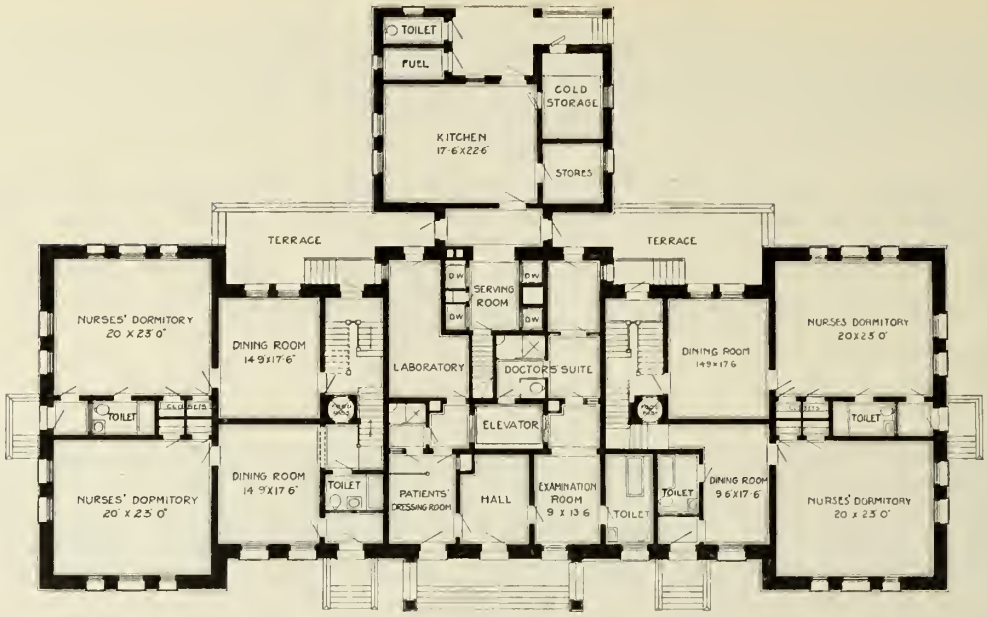



Fig. 1. Permanent hospital. First floor plan.

erwise assigned. If rooms for private patients are desired, the spaces marked "quiet room" will be available for this purpose. These rooms are also suitable for use as detention rooms for observation of doubtful cases.

In the rear of the main building there is a building of one story and basement for the heating plant and subsistence. The roof can be used for a solarium if it is considered desirable. Additional ward space can be obtained by making the kitchen extension the same height as the main building. Servants' quarters are not provided, but if necessary basement space is available for that purpose.

A patient on entering the building is washed, examined and provided with hospital clothing, his personal clothing being sent to the disinfector, sterilized and placed in the locker room. After examination the patient passes directly to the elevator and then to his respective ward or detention room without going through any space common to other wards. On discharge a patient goes from the elevator to the dressing room in the first story, where he leaves the hospital clothing, bathes, puts on his own clothing and passes out of doors directly.

Food service is arranged so that there need be no direct communication between kitchen servants and nurses or patients. Ward food and supplies are prepared in the general kitchen and carried to the serving room dumbwaiters. A dumbwaiter is installed for each ward unit. Nurses' food is also prepared in the general kitchen and carried to the nurses' dining rooms, passed through the "turn tables" or placed on tables at dining room doors. Dishes for wards are sterilized in the diet kitchens and dishes for nurses can be sterilized in the main kitchen dishwasher, which has a steam jet.

The building is of fireproof construction and all details are modern and designed to allow successful fumigation. The exterior walls are furred and the interior walls and partitions are of hollow terra cotta. Hard plaster is used throughout, with coved and "bull-nosed" angles. The plaster of the walls finishes flush with a white cement base. The base is coved against a metal angle whose vertical leg is flush with the cove and floor surface, the horizontal angle leg being bolted to the floor construction. Vitreous tiles are used for floors in toilets, baths, cleaning gear rooms, nurses' and dressing rooms; wood floors are laid in wards, corridors and quiet rooms. Linoleum is an alternative where money is available. The trim is simple and door surfaces are flush. Each of the two staircase wells provides two independent staircases, one to the second story and one to the third story. The flights run over each other in a corkscrew manner similar to the balcony staircases adopted in some theaters. The stairs are enclosed with wire glass.

The walls in general are painted. The plaster walls of nurses' rooms, dressing rooms, examining rooms, diet kitchens, baths and toilets have a covering of muslin glued to the walls and painted. The paint is all washable.

One elevator is used for all units. Danger of cross-infection may be obviated by washing down the elevator with soap and water, possibly followed by a disinfecting solution. The structure is made of steel plates and, if gaseous disinfection is desired, closing the door and sealing it with paper strips makes the whole structure airtight for this purpose.

Each ward is provided with a nurses' room, and

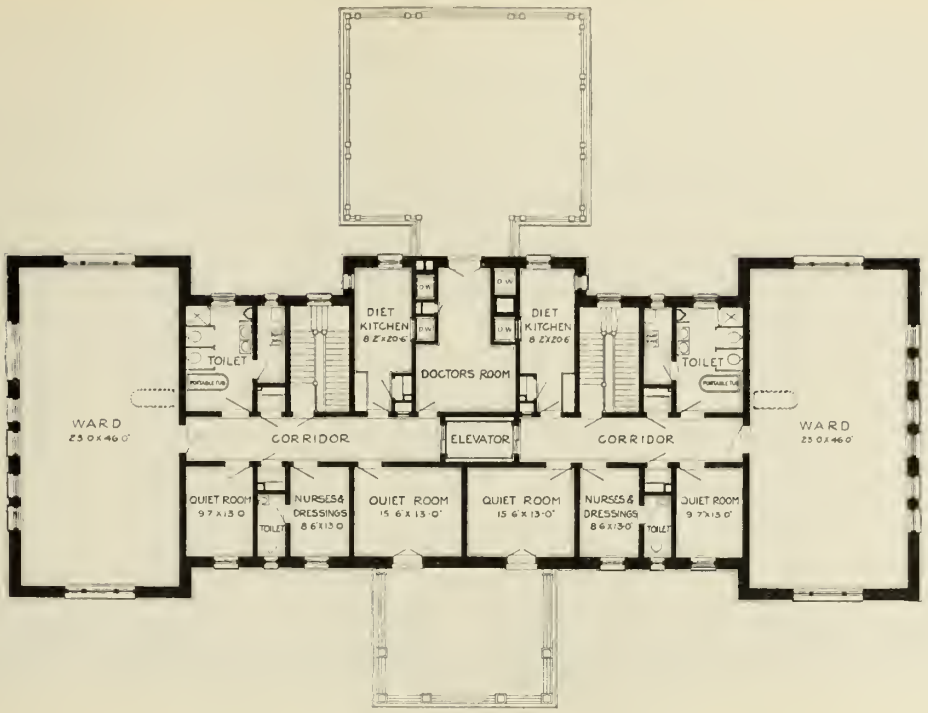



Fig. 2. Permanent hospital. Second and third floor plan.

a dressings room which can be used as an operating room and which will be available for surgical emergencies. It should be equipped for intubation, tracheotomy, mastoid work, etc. The laboratory is small, but sufficient for the necessary bacteriological work and urinalysis. It is equipped with gas and electric outlets and the proper plumbing fixtures. The pharmacy is intended principally for a store room for refilling the bottles sent down from the wards; it has also the necessary equipment for compounding and dispensing.

The heating, except for service rooms, is indirect, with cleaned air supply, the exhaust being passed over boiler fires killing all germs in the air. An alternative for treating the exhaust air is to turn it into a chamber where there is supplied a jet of superheated steam, and allow it to expand into the air away from any intake. The radiators, where used, are of the hospital type of plain design, with sections well separated and accessible for cleaning. Radiators in general are hung on walls, but where that is not practicable the radiators are raised on platforms about six inches high, the height of the base running around the room, to make inspection and cleaning easier.

Lighting can be done most advantageously by electricity with indirect general illumination. Wall receptacles and brackets will be installed for each bed. A silent call system is provided for summoning nurses. The plumbing is complete with simple fixtures with heavy white metal trimmings and fittings. A vacuum cleaning apparatus, a combination of the wet and dry systems, is installed in the basement, with inlets in all ward units. Each ward unit has an incinerator in which sputum cups, gauze dressings, and sweepings may be burned without leaving the ward unit.

Soiled linen may be disposed of in several ways. Chutes leading to a receptacle in the basement may be used, but these have certain defects. When they are opened there may be an upward draft which may carry organic matter or unpleasant odors from the soiled linen into the ward. Cleaning the chute is a problem which has been partly solved by providing a chute with glazed surface and a flushing device; but these have joints in their armor which make them somewhat less than perfect. The linen may be placed in a canvas bag and sent down in the elevator, put in the sterilizer and, after sterilization, taken out on the other side ready for the laundry.

The arrangement of rooms shown, approaches, as nearly as practicable, ideal requirements, in that (1) each ward unit is separate from other ward units, general access to wards being by independent stairways; (2) nurses of different wards cannot communicate with each other except by using the elevator; (3) nurses' messing arrangements and dormitories are separate for each group; (4) people serving food and supplies do not come in contact with nurses nor enter the wards or nurses' quarters; (5) examining and dressing rooms with toilets are provided for the reception and discharge of patients; (6) ample disinfecting and sterilizing equipment is installed; (7) provision is allowed for sterilizing exhaust

air; and (8) the details of construction allow easy fumigation of rooms.

The building is roughly estimated to cost $80,000.00, without equipment, and was originally designed as a unit for one of the naval hospitals.

### HOSPITAL OF TEMPORARY CONSTRUCTION

The plans submitted for a hospital of temporary construction do not provide such complete isolating arrangements as those shown for the permanent hospital. The layout is designed economically for temporary use with the idea of destroying the buildings when they are no longer necessary. With this intention in view the number of rooms is reduced to the minimum that would be necessary to care for an epidemic.

A small administration building is indicated, containing store rooms, lockers, disinfector and heater in basement; pharmacy, doctors' and nurses' rooms, kitchen and messing arrangements in first story, and sleeping rooms in second story.

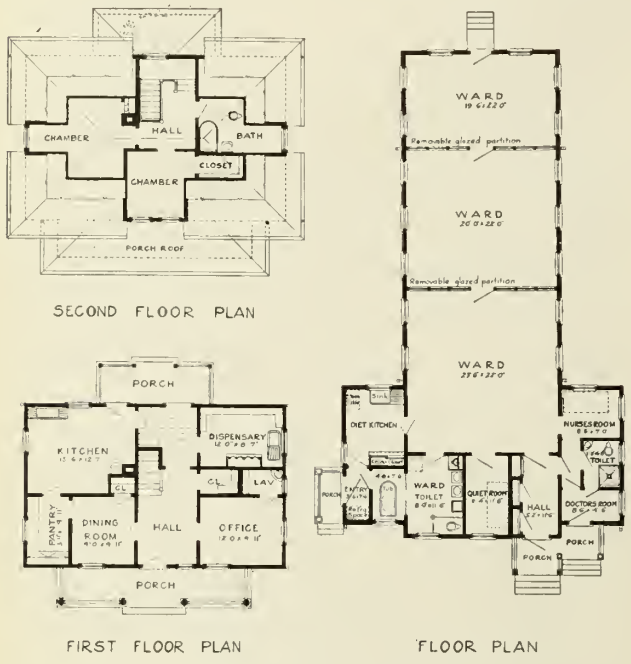



Fig. 3. Temporary administration and ward units.

The ward pavilion is divided into three portions to permit detention, observation and ward space. The partitions are glazed, are put up with screws, and can be easily removed. Doctors', nurses' and quiet rooms and halls provide a "circulation," permitting a doctor to change his clothing for his ward duties.

Heating is direct, steam or hot water as may be most practicable, with an exhaust fan in loft. Heat will be provided from a plant in administration building basement, or from a central system. General ward illumination is indirect, electric, with ample provision of wall brackets and receptacles. A silent call system and doctors' call systems are provided. An incinerator is installed in each pavilion for destruction of sputum cups, dressings and waste.

The buildings are of wooden construction with prepared or "ready" roof covering. The details of construction are simple and useless mouldings are avoided. The administration building, only, has a basement. Exterior walls are covered with "rustic" siding. Interior walls and ceilings are finished with a prepared wall covering of built-up wood strips, paper covered, or wood fiber sheets. A sized and painted cotton cloth is glued to the wall and ceiling covering. The cloth is painted after it is placed and finished smooth without gloss. Window and door trim is put on over the wall covering. Floors are of wood, waxed, except toilets and baths, which are of cement. The wall and ceiling finish will stand fumigating and washing without appreciable deterioration.

Patients will be brought in through the space marked "hall" directly into the ward and then to the toilet where bathing and dressing space is provided.

Food will be prepared in the main kitchen in the administration building, and carried to the diet kitchens, where steam tables and small gas or electric ranges are installed. Ward dishes will be sterilized in diet kitchens and will not leave the building; common containers will be washed and sterilized before being returned to the general kitchen.

The hospital is roughly estimated to cost $5,000.00 for each building, without equipment other than incinerators, ranges, and steam tables. The buildings were designed originally for a naval hospital.

## STATE HOSPITALS COMPARED

### Dr. Gahagan, of Elgin, Ill., Tells What He Saw on Recent Trip East

Dr. H. J. Gahagan, medical superintendent of Elgin (Ill.) State Hospital, who has recently made a tour of the Eastern state hospitals, has made some shrewd observations, which he purposes to incorporate in certain recommendations to the Illinois State Board of Administration.

He found that in buildings and industrial work the East was ahead of Illinois; that in the general care of patients the two sections are about abreast, though the East does not allow its patients nearly as much liberty as the West; that the East still holds to the principle of restraint by the use of many bars and wire nettings and canvas clothing; that in some of the Eastern hospitals none of the patients are allowed knives and forks, whereas in Illinois only the very small class of vicious and irresponsible patients are deprived of their use; that in the East patients are not given nearly as much outdoor freedom as in the West.

Dr. Gahagan will recommend that he be allowed to instal machinery for making clothes for patients; indeed, he has already been given such authority in the matter that on his trip he contracted for some of this machinery.

Fig. 1. Kleberg County Hospital, Kingsville, Tex.

## FIRST COUNTY HOSPITAL UNDER THE NEW TEXAS LAW

### Kleberg County Institution, Costing $35,000, Provides for Private and Free Patients, Infectious Diseases and Tuberculosis

By MRS. LENA SHENNERS, R. N., Superintendent

IN March, 1913, a bill was introduced, at the request of the Texas Anti-tuberculosis Association, by Senator T. H. McGregor and Representative Dr. L. A. Colquitt. The bill passed both the house and the senate and was signed by the governor March 26, 1913, and thereafter became known as the McGregor-Colquitt Hospital and Dispensary Law.

Under this law the legislature of the state of Texas made lawful an act authorizing the establishment of county hospitals and dispensaries, providing for the election for bond issues and the issuance of bonds for the cost of erection of same, providing revenue for maintenance and managing same, providing for the appointment of a board of managers and declaring an emergency.

The commissioners' court of any county is by this law empowered to acquire a site for a hospital and erect buildings for same, and to appoint a board of managers, consisting of five members, of whom at least two must be practicing physicians and one a woman.

This board appoints a superintendent of the hospital and fixes salaries, and also may establish and operate an out-patient department or free dispensary, and may appoint one or more visiting nurses, whose salaries are fixed by an appropriation made therefor by the commissioners' court.

The superintendent is the chief executive officer of the hospital, makes all other appointments and has general supervision thereof; however, working through the powers of the board of managers. This board is required to have monthly meetings at the hospital, thereby keeping up their personal interest in all its affairs, as well as a regular inspection of all its business.

The first county hospital to be built under this law has been established at Kingsville, Texas, and is known as the Kleberg County Hospital. It was opened to the public on January 20, 1915.

This building, put up at an original cost of $35,000, is built of reinforced concrete and is strictly

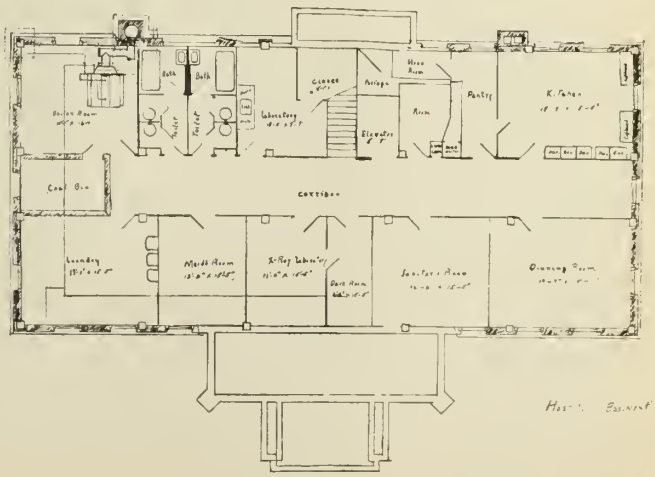


Fig. 2. Kleberg County Hospital. Basement plan.

modern in every point of building and equipment, including pathological and x-ray laboratories.

It consists of a basement, containing laboratories, kitchen, dining room, store rooms, laundry, furnace room, bed rooms and bath rooms for help.

The first floor has reception room, office, diet kitchen, bath rooms, and six wards, containing four to six beds each.

The second floor has the operating department, consisting of four rooms; a dressing room, bath rooms, diet kitchen, and eleven private rooms, and a sun parlor, which in this sunny Southland is an ideal feature.

The hospital has a forty-bed capacity, and has also two cottages of three rooms each, for contagious diseases and tuberculosis.

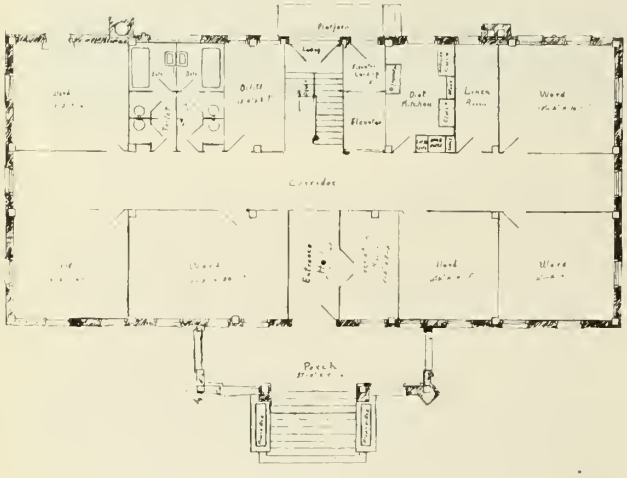


Fig. 3. Kleberg County Hospital. First floor plan.

The building occupies the center of a four-acre block, with beautiful lawns and trees.

Nowhere in Texas is the climate more ideally conducive to a return to health than in the southwestern portion, and Kingsville is in the heart of this region, and is easily accessible, since it is on the main line of the railroad.

Kleberg County was organized in August, 1913, being less than two years old, and Kleberg County Hospital stands as a positive proof of the enthusiasm and pride of its inhabitants.

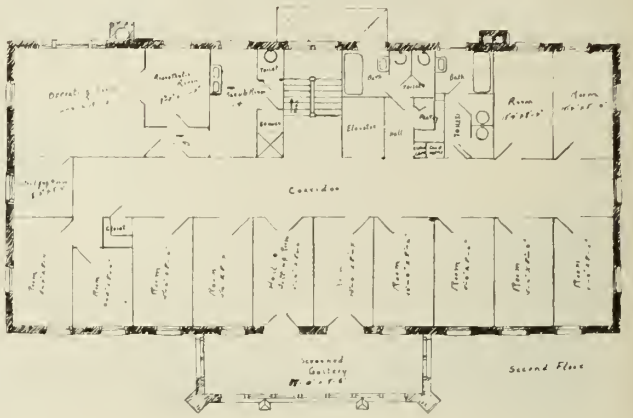


Fig. 4. Kleberg County Hospital. Second floor plan.

Mrs. Lena Shenners, R. N., was appointed superintendent of Kleberg County Hospital, and only graduate nurses of reputable training schools constitute the corps of nurses.

A hospital built under this law is no more a charity hospital than any other private or public institution, except as regards the care of the county's charges. All other patients are charged the usual hospital rates, and the board of managers is permitted to contract with any firm or corporation for the care of their sick.

Kleberg County Hospital is an example of what a county can do for those who live within its bounds, and an inspection of this institution is both interesting and instructive.

## HOSPITAL NOISES AND HOW TO MINIMIZE THEM

### Doors, Windows, Floors, Chairs, Chart Boards, Ward Utensils—In the Surgical Building Employees—Signal Systems

By BYAM HOLLINGS, M. D., Assistant Resident Physician Massachusetts General Hospital

THE subject of unnecessary noises in and about the hospital merits some attention. If the hospital is located in an active part of the city, a hospital zone of quiet should be marked out by appropriate street signs, and the cries of children, the noise of teams, trucks and automobiles, should be limited by the city authorities to those that are unavoidable. In the hospital yard signs such as "Please run your car quietly" and "Patients in this building are seriously ill; please run your car quietly" may be found useful if the entrance is near the wards.

In the planning of a hospital the noise producing factors should receive consideration just as do the matters of sunlight, operating light, fireproof construction and economical maintenance. The sick room and ward should be planned to be in reality places of rest and quiet. In the hospital already constructed, improvements may be instituted to reduce the noise.

At the Massachusetts General Hospital it was found that in a routine day over 3,500 persons passed through a doorway in the main corridor of one of the hospital buildings in 24 hours. These figures give food for thought; the amount of noise that so many people create in handling

doors, chairs, utensils, or in walking, must also be considered. Today medical and surgical research requires the activity of great numbers of persons. One ward case is studied by the heart specialist and his attendants, another by the student of gastro-intestinal diseases, a third by the investigator of the respiratory organs. Some patients seem immune to noise; others suffer in silence. Still others, who, on account of their financial standing, feel more independent, do not hesitate to express themselves on many subjects, and noise is occasionally one of them.

Every hospital has its own problems, but possibly the following suggestions may be found useful:

*Doors.* If there are double doors, one leaf may rattle when held by a single catch. This is remedied by the double bolt, one at the top and one at the bottom, connected by a rod and manipulated by a handle at the middle. Door knobs and latches may rattle from a missing screw or some other neglected part.

Doors may slam; this may be corrected by the piston door check or the more expensive Corbin door check. The noise of closing doors and rattling latches may nearly be eliminated by a small four-inch square of three or four thicknesses of duck. At one side of the square is a loop which fits over the inner knob. The opposite side has two short tapes by which the square is held over the latch to the outer knob. When not in use the pad hangs by the loop on the inner knob. These are cheap and easily washed. They are best appreciated when tried, and nurses are unanimous in saying that they reduce noise and slamming.

Elevator doors when noisy are a nuisance to the architect as well as the hospital administrator. The solid metal thin leaf extension door with wire glass panels is probably the most satisfactory to close the elevator shafts. Gravity sliding doors moving on an inclined track need a buffer or compressed air device to eliminate the noise of closing.

*Windows.* Windows exposed to severe winds may rattle. A snug metal window strip obviates this and reduces the amount of cold entering. Double windows on the street in a private ward reduce the amount of noise entering, and also conserve the warmth of the room.

*Floors.* The ever useful battleship linoleum or the more expensive cork tiling reduces the noise of traffic in the corridors and wards. Rubber, as we obtain it, does not wear so well. However, a high-grade rubber matting, or tile, may last for years, but at best its length of life is doubtful. Rooms without door-sills and adjacent corridors equipped with dark green or brown linoleum are pleasant to work in and restful to the eyes.

*Chairs.* In the offices and wherever there are wooden floors, chair tips of the proper sort on all chairs are desirable. Rubber, felt and leather tips are not as successful as the oval, hollow, metal tip which fastens into the wooden leg by three prongs. With these attached the chair slides quietly, and the noise is reduced at least one-half. Wheel chairs in the wards and rooms should be inspected for squeaks and rattles. So also should the patients' trucks.

*Chartboards.* If these hang at the door frame or the head of the bed, the rattling due to a breeze or other disturbances may be eliminated by the use of a small brass tapestry hook to hold the chartboard snugly.

*Ward Utensils.* These numerous noise producers, such as bed pans, glassware, trays, and mealtime appurtenances, are best handled in rooms which are sufficiently isolated so that the noise, which is apparently unavoidable, may be muffled. More than one hospital administrator would be pleased if the ward diet kitchens or utility rooms were equipped with some feasible system of silencers. In some private wards the least desirable patients' rooms are those near these noise centers. Hence the attention given in new hospital construction to this question.

*Surgical Building.* Linoleum floors in operating rooms are found satisfactory. A dark shade of red, green or brown is good, and such floors are quiet and if properly cared for are nearly non-absorbent. Substantial white wooden instrument tables are light, quiet and satisfactory. If the floor is tile, white rubber close-fitting caps for the bottoms of the pails are a great aid for quiet.

If the stands where glass jars are kept are fitted with glass shelves, the noise from the contact is much reduced by a rubber covering to each shelf. The slamming of metal lids on hampers may be reduced by a little study and the use of split rubber tubing.

*Employees.* Those entering the wards as nurses, house pupils, orderlies, porters, and all employed about the hospital offices, should wear rubber heels. At night as well as in the day the supervisors should be alert for unnecessary laughing or talking in the vicinity of the patients.

*Signal Systems.* These have been the subject of much experimentation, the net results of which seem to approve the light signal for the patients and nurses. For physicians, the call system, by which the call may be sounded simultaneously in all parts of the hospital by one operator speaking the name at the central office, has also been found a great time saver, and when properly muffled has caused no complaint as a noise producer.

# TRAINING SCHOOL ORGANIZATION AND WORK IN MENTAL HOSPITALS[1]

## Necessity for Such Schools—Qualifications for Would-Be Nurses—Problems Which Arise When Organizing Schools—Curriculum of Study Must Meet Requirements for State Registration—Perfect Organization Rather a Matter of Evolution Than of Prescribed Form

By CORA McCABE SARGENT, R. N., Superintendent of the Training School for Nurses, Sheppard-Enoch Pratt Hospital, Towson, Baltimore County, Md.

THE training school for nurses as an adjunct of the hospital for the treatment of mental diseases came into being because of the insistent need of it. In fact, as soon as the veil of ignorance and superstition, which so long enveloped these disorders, was torn away, and they were recognized not simply as conditions, but as definite forms of disease or symptoms of disease, science made a most vital and far-reaching advance.

It became at once apparent that, if these conceptions were to be put to a successful practical test, the caretaker of former times, whose one asset was sheer physical strength and whose sole duty was to keep a watchful eye on the patient, must give way to the skilled nurse who could intelligently supplement the work of the physician. Not only must the nurse possess certain knowledge and skill, but she must also bring to bear upon her work a definite form of training suited to the illness with which she is to cope.

How were such knowledge and training to be gained?

The necessity for the training school for nurses for mental diseases thus suggested itself, and its varied advantages could not be gainsaid. The obstacles, however, in the way of its organization were many; and even today certain very definite prejudices and objections to such schools still exist, and are often most discouraging.

In the first place one must always be prepared to meet a deep-rooted fear of the insane and hence a great unwillingness upon the part of the would-be nurse to take up this branch of nursing. Again, the work demands certain peculiar qualifications in an applicant without which her training will be worthless. It demands education, inborn refinement, dignity, poise and an elastic temperament. The difficulty of inducing women with such qualities to take up a branch of work which upon the surface appears so unattractive, needs not to be pointed out, but they are the very characteristics which should unite to form the ideal nurse for the mentally ill.

To one who is organizing a school in connection with a hospital for mental diseases many peculiar problems are presented. If the prospective school is to be organized in a hospital where only attendants have been doing the work of the wards, it is most unwise, if not wholly disastrous, to initiate the new regime by dismissing the women already there, many of whom can give valuable assistance, and, indeed, are quite capable of becoming pupil nurses, and of forming the nucleus of a future school. Others may possibly be retained until such a time as their places can be filled by pupils, or, if the expense be not too great a consideration, graduate nurses may be employed until the school is on its feet. These are the problems which circumstances must solve.

The curriculum of study must also be worked out, in a great measure, for each individual school, the standard, of course, being that set by the requirements of state registration. No school can be put at once upon a thoroughly satisfactory basis. In fact, more often than not, it is the changes which are evolved from experience or necessity which round out a perfect organization. Each superintendent of nurses must work out her own ideals and become a law unto herself.

The following is an outline of the work being done by the training school of the Sheppard and Enoch Pratt Hospital, now entering upon its tenth year, which, by reason of the successful basis upon which it rests, one of evolution and development during all this period, entitles it to a hearing:

Since the organization of the school numerous important changes have been rendered necessary to meet the increased demands of the hospital upon the nursing department. The most radical and far-reaching change, however, was the extension of the period of training from two to three years, and the establishment of such affiliations with general hospitals as enable the graduates to meet the requirements of the state board examinations. The course of training as it now stands covers a period of three years, eighteen months of which time is spent in one or more general hospitals.

The executive staff at present consists of a superintendent of nurses and four assistants, the duties of three of whom comprise a general supervision of the wards. The fourth assists in the teaching of pupils, is responsible for the nurses'

[1]This is the seventh in a series of papers on "The Government of State Hospitals for the Insane." Last month appeared "Occupation of Patients in State Hospitals for the Insane"; next month will appear "The Treatment of Mental Diseases in a General Hospital."

home and the apartments occupied by domestics, and has complete charge of the hydrotherapeutic department.

There are eight head nurses whose personal responsibility includes the assignment of duties and the supervision of pupil nurses, post-graduates and maids. They are also responsible for ordering and using the ward supplies, requisitions for which are submitted to the superintendent of nurses for approval. Quite recently an instructor of domestic science has been added to the nursing corps. She is held responsible for the course in dietetics covering a period of four months, including weekly classes and practical demonstrations. Instruction in dietetics was formerly obtained at a school of domestic science in Baltimore.

The regular school year opens in October and extends over a period of eight months, during which time demonstrations, lectures, and quizzes are conducted regularly. Students may enter, however, at any time during the year as vacancies occur. Applicants must be between the ages of twenty and thirty-five years; must be possessed of a high school education or its equivalent, and be in good physical condition. A probationary period of two months is required. In the event of acceptance as a pupil, this time is counted as part of the regular term requisite for graduation.

In addition to regular daily hours off duty, the pupils are allowed one-half day each week for recreation and study, and every third Sunday all day. A vacation of two weeks is given annually between the months of May and October.

The following is an approximate division of the curriculum for three years:

| | Lectures | Classes |
|---|---|---|
| Anatomy and physiology | 8 | 20 |
| Hygiene | .. | 4 |
| Materia medica | 6 | 20 |
| Practical nursing | .. | 24 |
| Urinalysis | 1 | .. |
| Mental nursing | .. | 8 |
| Invalid occupation and amusement | .. | 12 |
| Hydrotherapy | .. | 10 |
| Nursing ethics | .. | 10 |
| General medicine | 15 | .. |
| Infectious diseases | 8 | .. |
| General surgery | 8 | .. |
| Anesthesia | 1 | .. |
| Ventilation and plumbing | 6 | .. |
| Bacteriology | 8 | .. |
| Bandaging | .. | 8 |
| Massage | .. | 12 |
| Mental and nervous diseases | 18 | 6 |
| Gynecology | 6 | .. |
| Orthopedics | 2 | .. |
| Obstetrics | 8 | .. |
| Infants and children | 6 | .. |
| Special diseases | 3 | .. |
| Dietetics | 14 | 14 |
| Pharmacy—Two hours' practical work daily for two months. | | |

In addition to the course of study outlined above, weekly conferences are held with the nurses in which the various patients and their illnesses are discussed by the physician in charge. An outline of the history is given, and the course of treatment to be followed is gone over and explained. This is done to give the nurses a clearer understanding of cases and to secure more intelligent and effective work.

It has also been found an advantage to hold classes for head nurses for the purpose of discussing the methods of the school in an informal way. Reports of nurses' work are submitted, and criticisms and suggestions are invited with the object of promoting a greater spirit of unity and establishing more uniform methods of work.

To qualify them to amuse patients or to teach them simple occupations suitable for reeducation, our nurses are trained in methods by a course of invalid occupations and amusements, which is worthy of a fuller description.

This course, comprising at least twelve lessons, is carried on by one of our graduates and is as follows:

1. Games of cards, especially games of solitaire, dominoes, checkers, and the use of simple puzzles.

2. String work and weaving. Knot tying and its application to the fabrication of useful or ornamental articles.

3. Paper folding — making envelopes, caps, frames and boxes. Paper cutting, such as making stars, paper dolls, cut-out pictures.

4. Pamphlet stitching—scrap books and binding.

5. Crepe paper work.

6. Basketry—weaving from reeds.

7. Simple embroidery.

(In all the above subjects talks are given to simplify the subject and to explain methods.)

8. Wood work. This consists of a demonstration of simple wood carving, and of practical work in the shop in making simple objects, such as paper knives, canes, trays, bird houses, wind toys, stools, etc.

9. Leather work. A demonstration of the technic of carving and hammering leather is given.

10. Metal work. This consists of practical work in Venetian iron work, hammering copper, making copper ornaments, initials, paper cutters, etc.

Each pupil is also given a certain definite amount of practical experience and instruction in calisthenics, bowling, serving tennis, and games such as volley ball, dodge ball, etc.

The demand for instructors in this particular course is growing so rapidly that it is now our intention to give those pupils who show any especial adaptability in this line of work especial instruction so as to fit them for any future similar work here or elsewhere.

The post-graduate course offered by us to grad-

uates of other schools continues to bring in pupils. There is each year, however, less opportunity to offer this instruction, owing to the increase of our own staff of pupils and the consequent lack of room. The value of this branch of nursing is rapidly being recognized. It has proved to be a work so rich in possibilities and interest that it would seem that a nurse who takes a course of training in a hospital for the treatment of mental diseases before taking a general hospital training has every advantage in that she has such excellent opportunities to acquire self-control, self-reliance, patience, and tact; all necessary assets of the successful nurse.

## THE HOSPITAL LIBRARY—BOOKS FOR THE PATIENTS[1]

### Plea for a Trained Librarian—Administration—Selection of Books—Separate Children's Library—Library Technic—Distribution of Books—The Library as an Adjunct to Other Departments

By EDITH KATHLEEN JONES, Librarian McLean Hospital, Waverley, Mass.

PERHAPS no other branch of service to the public has grown so rapidly in the last few years as that of the hospital. Cities and states vie with each other in maintaining the finest buildings, the most efficient equipment, the most prominent staff of surgeons and physicians, the best training schools for nurses; private hospitals and sanatoriums have multiplied throughout the land. All departments of science and industry are requisitioned, not only to care for the immediate physical needs of the sick, but also to minister to their minds and train their hands to work which may enable them to earn their livings when dismissed from the hospital as well as help them over many tedious hours of convalescence.

With the baths and the Zander apparatus, the diet kitchen, the handicrafts school, the social service department, all commanded by experts, the library now holds an important place, as it becomes more generally recognized what an essential part is played during convalescence by the right books efficiently administered. The old idea of a library as a mere collection of books, few of intrinsic value, most of them so out of date as to be unreadable, all of them with any outer attractiveness they may possess completely disguised in brown paper uniforms and arranged on the shelves without any logical sequence—a library which runs itself, for all the interest anyone takes in it—this old idea happily is passing. The modern, up-to-date hospital knows the value of an equally modern and up-to-date library, in which new books that people want to read are purchased while still new, and taken to patients who will be interested or benefited by them; in which the librarian co-operates with the physician and the nurse for the mental and therefore physical welfare of the patient.

The state and private hospitals for mental diseases have long recognized the need of books in their work, even though comparatively few of them have had, until recent years, organized libraries. That the general hospitals also are convinced of the value of the patients' library is shown by the fact that in the plans for some of the new hospitals recently erected, that department is provided for. The Burke Foundation for Convalescents, at White Plains, N. Y., the Robert Brigham Hospital for Chronic Cases and the Peter Bent Brigham Hospital of Boston, all have included libraries as a necessary part of their equipment. The Boston City and the Massachusetts General Hospitals long have maintained such libraries, and the latter is planning for a bright, cheery reading room and library for patients in its new administration house, as well as for a spacious and well equipped medical library. Nearly all the smaller hospitals have books, if not organized libraries.

The value of the library being conceded, the question remains, how can it be most economically created and efficientiy maintained?

Without doubt, for the larger hospitals, general and mental, an organized, central library, with a trained and experienced librarian in charge who shall have full power in the selection and buying of books from a definite, annual appropriation, offers the most logical, the most practical and the most economical solution of the problem.

#### A PLEA FOR THE TRAINED LIBRARIAN

It must be confessed, however, that the hospitals maintaining such libraries are not many. They may have books, they may have a central library; but in most cases this is not classified or catalogued, and in nine cases out of ten there is no trained librarian. Just why the hospitals, of all institutions, who require experts in every other department, should almost invariably ignore

[1]Next month there will be published a paper on The Medical Library, by Mrs. Grace Whiting Myers, Librarian, The Treadwell Library, Massachusetts General Hospital.

this need in the library, has long been a matter of much speculation among librarians. It cannot be on account of expense, because—although it may leave an untrained person to wrestle as best she can with the technical problems of the patients' library—when the medical library requires cataloguing and classifying, the hospital almost invariably calls in an expert from outside—and pays expert prices. Now suppose the hospital has employed a skilled and experienced librarian for a few weeks and has got its medical library in good working order. The expert goes. New books arrive. Who is going to classify and catalogue these? Who is going to look up the half-forgotten reference for the doctor who is working on an important case? The untrained person who has charge of the library—who, whatever her other qualifications, knows nothing of library technic and probably is unacquainted with French or German? Or must an outside expert again be called in—at expert prices?

Instead of the trained librarian in the hospital, who can manage both libraries, what have we? Usually a much overworked person who does wonderfully well under great handicaps, but who has to work out all technical problems for herself at a great waste of time and energy. In most cases she combines the care of the library with that of some other department—stenography, drugs, handicrafts, recreations, or social service—either one of which really requires all her time and thought and strength. Here is what almost invariably follows: 1 job which takes all one's energy + another job which does the same = 2 jobs half done + 1 worn-out woman. Does the hospital gain or lose in such service?

On the other hand, a trained and experienced librarian has at her fingers' ends the technic which seems so elaborate and hopeless to the untrained person. Her training presupposes a college education or its equivalent, therefore she will know something of French and German and be able to catalogue foreign medical books and look up references. She should be perfectly capable of taking full charge of both libraries, so that no outside help will be needed. She knows editions, and how to buy books, and will study the needs of the general library to build it up intelligently. Moreover, from her superior education, she should be able to help the nurses greatly by suggesting books for them to read and by giving them lectures on books and reading, current events, or the history of art. Such "culture courses" are invaluable to the nurse in her practice and already are being made a feature in certain training schools. It would certainly seem that the trained librarian is worthy of her hire.

### ADMINISTRATION

Since the central library, with books loaned from it for longer or shorter periods of time to wards or cottages as well as patients, is now generally conceded to be much more efficient in its workings than the old bookcase with its never-changing books on the wards, this subject need not again be discussed. The next question is of details of administration.

In the first place, the hospitals fall naturally into two classes: those for general, or acute physical and surgical cases, and those for chronic cases and mental diseases. In some departments the two can be administered by the same methods, but the libraries of these two classes call for quite dissimilar treatment in certain respects. The general hospital, whose patients stay only for a few days or weeks, demands a different class of books and a more simple technic than the hospital for mental diseases or chronic cases, whose patients often are detained for months and years.

### SELECTION OF BOOKS

Naturally, the first thing to be considered in either the general or the mental hospital is the selection of books and magazines. It is especially important to subscribe to many of the latter, because they are light and easy for weak hands to hold; they have many pictures and short stories and articles. But these, with few exceptions, should be new and current numbers. If there is one thing that those responsible for the selection of reading matter for hospitals overlook, it is that even though the personnel of the patients is continually changing, the books in the library are not peculiar to that library, but probably have been read and re-read by the patients before coming to the hospital. They want something new. They want the latest magazines and the latest fiction.

Here enters the question, how shall these new books be secured and who shall select them? Usually there is no system about this; there is no definite fund for books; a few are donated from time to time, and the superintendent or the board of lady visitors select those which are purchased. Without going into the pros and cons of this method, perhaps it will be sufficient to say that, in every case known to the writer, that hospital which has a definite sum, however small, with which to buy books as they are published, is firmly convinced that this is the only solution of the buying problem, and those librarians are happiest whose trustees allow them to select the books, having become convinced that the librarian, who comes in contact with her readers and quickly learns the sort of books demanded, is therefore a

more competent judge than anyone else of what should be in the library.

The librarian knows that new fiction is demanded; that small, light-weight books of colored pictures or interesting short stories are eagerly taken; that her foreigners' eyes light up with joy at the sight of a readable book in their own language. And she will not make the mistake of one lady visitor, who, out of the kindness of her heart but ignorance of books, sent in an indiscriminate order to her bookseller for "some books in Yiddish." The books came and were duly presented to several Jewish patients in turn, who received them politely but without enthusiasm. Finally the librarian asked one very well-educated and cultivated Jew to tell her what the books were about and why no one read them. He, hesitating for fear of hurting her feelings, explained that they were Christian Bible stories told for children!

For the general hospital, few books other than fiction and pictures will be much in demand by patients, though books of travel and art and some of the best out-of-doors and "nature" essays should be on hand in case they are wanted, but in the hospital for chronic cases or mental diseases, while plenty of fiction and the best of the new novels should be supplied, the other departments also should be built up. Travels, history, biography, art, literature, science, sociology—all these should be represented by the best books for the purpose on each subject. Books dealing with current events should be bought as published. All sorts of persons with all degrees of education will be found in these hospitals, and their tastes must be consulted, although great care must be taken that morbid, gruesome, over-emotional and too sentimental books are not included in a library of this sort.

The children must be especially considered when books are selected, and plenty of wholesome fairy stories and animal stories and books of adventure provided for them.[2]

### LIBRARY TECHNIC

The books having been selected, the next thing is to arrange them on the shelves in some logical order, and provide some sort of list or catalogue by which they may easily be found. In the general hospital, where there is little but fiction, any but the very simplest classification is manifestly absurd. The fiction may be arranged on the shelves alphabetically by authors, by means of the Cutter author-table to three figures, and what little else there is—art, travel, etc.—may be indicated by a class figure before the author number. It is generally found more convenient to keep children's books by themselves. It is doubtful if any catalogue is needed, unless for the sake of the librarian, who probably will know every book without its aid. An accession book may be kept, but experience has shown that the only really essential catalogue is a card shelf list: that is, a card for each book, with number, author and title, arranged in drawers or boxes according to number.

The hospital for mental diseases presents a different problem. Because of the greater number of subjects in its library and because of the fact that the patients probably will use a catalogue to some extent at least, the library technic, while still as simple as possible, will of necessity be more elaborate than in the general hospital. Books must be classified and catalogued in order to be easily found and to show what subjects the library owns. Except in very small libraries the shelf list will not be enough.

There are many ways of charging books, but the simplest and most efficient seems to be by means of a book-pocket pasted on the inside of the back cover of each book, on which the date when the book becomes due is stamped; a book-card bearing number, title and author, which is kept in the pocket when the book is on the shelf and is inscribed, when taken out, with the ward letter or number or the patient's name; a box with date-index cards, in which the cards of the books taken out are placed behind the corresponding date.

The question of covers or no covers on library books has long been a burning one. Nearly all the public libraries have now discarded the paper covers, realizing how much more attractive are the bright book covers. Some libraries shellac their children's books. Little by little the institutions are adopting the new method of discarding covers, which certainly has everything to recommend it. Theoretically, books get soiled by handling, but in reality, a modern, hygienically conducted hospital with its scrupulously clean patients, would seem to offer the least possible chance for contamination. As far as contagion goes, old books are usually sent to the contagious wards and then burned. There is really less chance for a book to acquire dirt or germs in a hospital than in the ordinary tenement home to which so many public library books are loaned, but if it is a question of paper uniforms or shellac —why not try shellac? It can be washed.

### DISTRIBUTION OF BOOKS

With the ordinary library routine thus reduced

[2]There has recently been published by the A. L. A. Publishing Board, 78 E. Washington street, Chicago, an annotated List of Books for Boys and Girls, by Miss Hewins, which should be a great help in providing reading for children in hospitals.

to its simplest terms, the librarian has all the more time at her disposal for getting books to the patients. That hospital which can make of its library a pleasant reading and lounging room accessible to all but bed patients, is much to be envied. McLean Hospital has such a central library, and the Burke Foundation, mentioned above, is a good example of this class among the general hospitals. They have there about 600 volumes, 400 of which are in the main library and 200 in the boys' branch; three-quarters of all these are fiction; they have about a hundred books of pictures. Patients go to the central library if they are able, but the wards and cottages are kept well supplied. Although this hospital is so very new, patients and employees are using the library to a degree beyond all expectations.

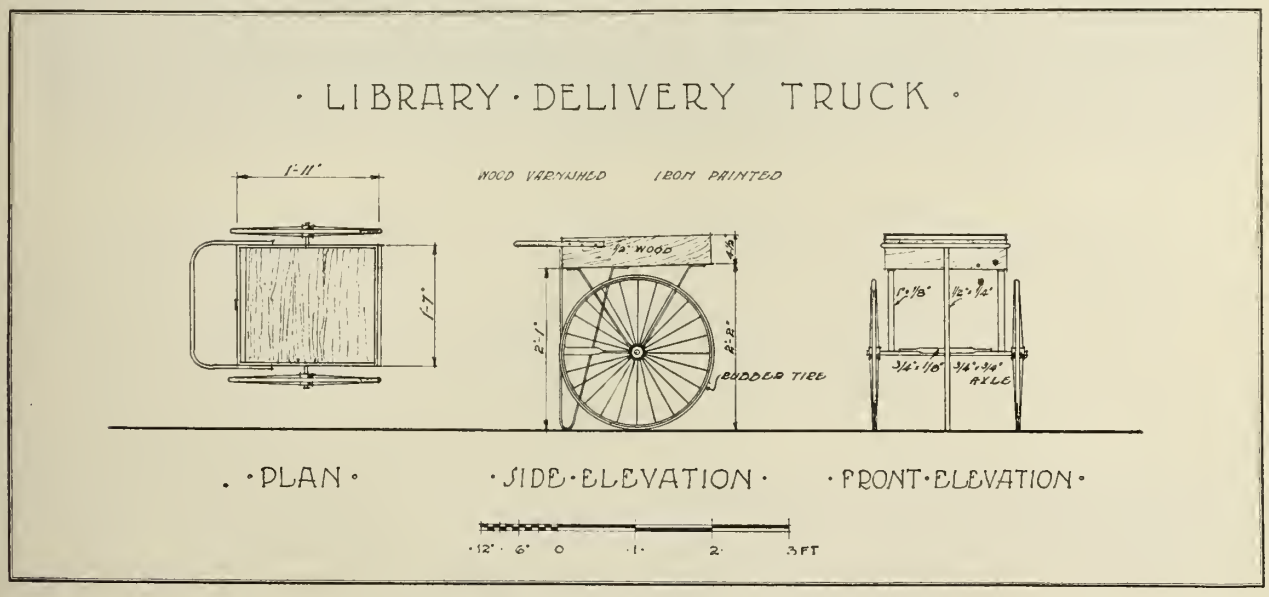
The Massachusetts General Hospital has an ingenious scheme for getting books to its patients. They have had made a small hand-cart just the height of the beds.[3] Every afternoon from two till three the librarian spends in one of the wards (taking them in turn, one ward each day) with this little cart piled full of books suited to that ward; the cart is pushed up to each bed and the patients thus can make their own selections. If they ask for any particular book not in the cart, the librarian sees that it is sent to them. Nurses are expected to help the librarian by calling her attention to new patients, and by trying to interest their patients in books.

In the distribution of books in the hospitals for the insane, the cooperation of the nurses, especially the head nurses, is indispensable; for here are, not physically ill or convalescent patients with a normal outlook on life, but patients whose inner vision is distorted, who must be coaxed and urged to interest in things about them. With such, it is not enough for the librarian to leave a book; the nurses must see that it is not destroyed and must try to arouse interest in it. Often it is the nurse who finds out what the patient really wants, but the librarian must be able to give him just that sort of book. There is much opportunity here for the librarian to co-operate with the doctors in selecting books for individual cases —depressed, delusional or excited.

### THE LIBRARY AS AN ADJUNCT TO OTHER DEPARTMENTS

That that library is not using its possibilities to the fullest extent which caters only to its patients, is another idea which is gaining ground. Nurses and other employees are quick to respond to its privileges offered them, and the nurses' home might well be considered a branch to which suitable books are loaned. Of course, to be really valuable, this means that many books other than fiction must be bought.

In the handicrafts department, the library can be of great assistance if it is able to buy books telling how to make baskets, rugs, pottery, etc., and books and periodicals on decoration and design. McLean Hospital supplements its arts and crafts department by a card catalogue, jotting down the volume and page of some particularly pleasing shape for pottery or basket, bit of ornamentation for leather work or wood carving, a hint which might be used in weaving. Already this catalogue has been used sufficiently to compensate for the little trouble it is to make it.




Library cart, in use in the Massachusetts General Hospital.

[3]See article by Dr. F. A. Washburn, entitled "Hospital Furniture in Use at the Massachusetts General Hospital," in THE MODERN HOSPITAL for November, 1914. (Vol. III, p. 335.)

Fig. 1. Edward W. Sparrow Hospital, Lansing, Mich.

## THE EDWARD W. SPARROW HOSPITAL, OF LANSING, MICHIGAN

### An Institution That Grew From a Small Beginning and Now Meets Well the Needs of an Appreciative Community

By MAUDE LANDIS, A. B., R. N., Superintendent

MICHIGAN seems especially fortunate in having influential citizens who recognize the needs of sick humanity, and who show their interest in the promotion and conservation of health by erecting beautiful hospitals on spacious grounds and bestowing these architectural gifts on the cities in which they have lived and amassed their fortunes.

The Edward W. Sparrow Hospital, of Lansing, Michigan, bears the name of its donor, who lived just long enough to see his gift a reality.

Nineteen years ago a Woman's Hospital Board was organized for the establishment of a hospital for Lansing. With a history of ups and downs, like that of others of small beginnings, it grew and grew. A general interest and appreciation of its need were awakened, and later in the course of time a residence and lot were purchased.

Mr. Sparrow became interested, made a gift of the adjoining lot, added a wing for the operating rooms, and furnished it. In time the enlarged residence became inadequate. During this history-making period a Young Woman's Hospital Auxiliary was formed to help in supplying bed linen, blankets, napery, and such emergency needs as might be apparent.

In 1910 Mr. Sparrow unconditionally donated $112,000 for the purchase of a site and the erection of a new hospital, which was completed in 1913. At a dinner to which he had invited friends among whom he had grown up, for the purpose of making known his great plan, he appointed them a self-perpetuating board of trustees. He also made known to them his wish that they delegate the operation of this new hospital to the Woman's Hospital Board, which had managed "the little old" hospital so wisely and so well. And then he presented this beautiful hospital to the citizens of Lansing.

The city of Lansing has always been interested in the growth and activities of this hospital, but this interest was not expressed in the appropriations, for a city government finds many places in which to sink funds. However, no definite demands have ever been made, and in time the appropriations may be increased. Local societies, lodges, organizations, churches and private citizens have furnished rooms and equipment, and

proud indeed may the citizens of Lansing be of the gifts so generously bestowed.

The Edward W. Sparrow Hospital is located on spacious grounds on East Michigan avenue, about one mile east of the State Capitol.

The architecture of the building is unusual and

Fig. 2. Edward W. Sparrow Hospital. One of the diet kitchens.

unique. It is a three-story, vitrified brick, concrete and hollow tile building, with sun parlors at each end, supported by full-length Corinthian pillars. A porte-cochere, in front, is supported by the same style of columns. The body of the building lies due east and west, with wings at angles of 45 degrees towards the front. This affords direct sunlight in some rooms all day long. At the back of the building are the power house and laundry.

The building is fireproof, all the windows are of French plate, the stairways are of iron. The two sets of inside stairways take the place of the usual unsightly exterior fire escapes. The floors are of concrete, with an eighteen-inch border of asbestone, which continues upwards to form the baseboard. The floors in corridors and rooms are covered with brown battleship linoleum, reducing to a minimum the pain of aching feet of busy nurses, and preserving a silence, otherwise impossible, for the patients.

The rooms are of good proportions, well lighted by electricity and daylight, and steam heated. Most of the rooms are for private patients. The wards contain two, four, and five beds. The beds in the wards are of the "convent style," affording each ward patient as much privacy as possible.

The building is so wired that when the bright lights are not needed the current may be thrown on to another circuit, whose globes are red, producing the dim light that psychologically permits greater quiet.

The building comfortably accommodates sixty patients. There is so much demand for hospital facilities that reservations have to be made for most patients, although emergency cases are admitted whether or no. A building of twice the capacity is really needed.

The building is equipped with a ventilating system, which is run by electricity, and changes the air every seven minutes. The heat is automatically controlled by air compression. The silent signal system for nurses' call is installed. There is a large automatic electric elevator, also an electric dumbwaiter.

The interior finish is oak, carefully chosen, beautifully grained; in some places this oak is white enameled, depending on its use in the hospital. The banisters are of mahogany; Florentine glass is used in service room doors and in all the transoms.

The length of each corridor is twice cut by double full-length glass doors, so that any noise in one part of the floor need not disturb the patients in other parts of the same floor. The bath rooms are white tiled; the tubs and sinks are of porcelain, and each floor is provided with a steam pan sterilizer and a warming oven for the bed, douche pans and blankets.

On the ground floor (two-thirds above ground) are the main kitchen, dining rooms, class room,

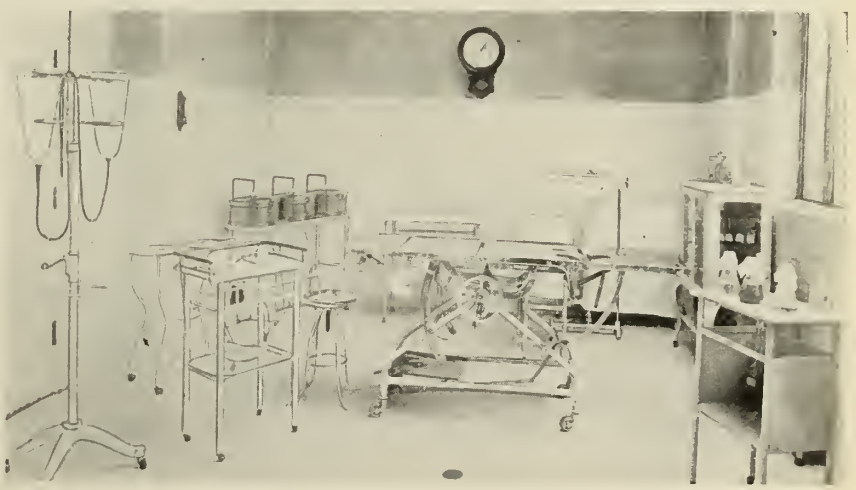


Fig. 3. Edward W. Sparrow Hospital. One of the operating rooms.

special nurses' dressing room with adjoining bath, store rooms, drug room, central linen room, and x-ray department.

On the first floor are the office, the board room, the superintendent's suite, private rooms, male

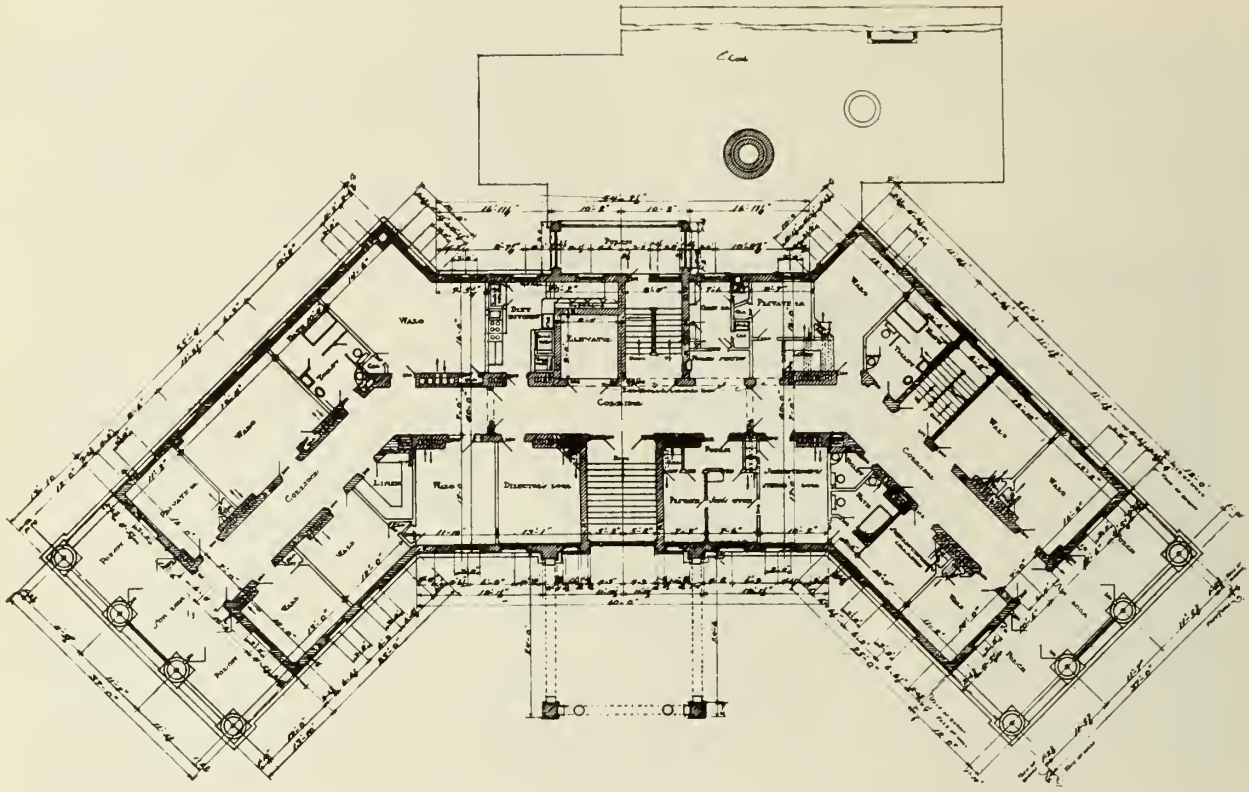


Fig. 4. Edward W. Sparrow Hospital. First floor plan.

wards, nurses' station, diet kitchen, service room, linen closet, and sun parlors and porches at both ends of the corridor.

On the second floor are the private rooms, female wards, children's ward, nurses' station, diet kitchen, service rooms, linen closet, and sun parlors and porches at both ends of the corridor.

On the third floor are some private rooms, convalescent female ward, nursery, maternity department, with delivery room; the operating rooms, the sterilizing room, surgical work room, doctors' dressing room, nurses' station, diet kitchen, service room, and sun parlors and porches at both ends of the corridor.

The surgical department consists of two large, well-lighted operating rooms, with white tiled floors and high, white vitrified tile wainscoting. The walls and ceilings are painted a soft but decided green. These rooms are equipped with the latest models of operating tables, cabinets and enameled iron furniture. Between the two operating rooms is the sterilizing room, with its specially built autoclave, hot and cold sterile water tanks, instrument and pan sterilizers, heated by high-pressure steam. Adjoining, but not connected with the operating rooms, is the work room, generously supplied with lockers and drawers for supplies and instruments. Across the corridor is the doctors' dressing room.

There is a diet kitchen for each floor, equipped with a large steam oven, and copper-covered steam table for hot food, a tray rack, a built-in cupboard and drawers, serving table, refrigerator and ice-box, running hot and cold water. Realizing the great importance of satisfying the patients by careful attention to diet, the hospital has spared no expense in making the food palatable and the trays attractive. The dishes are distinctive, of Syracuse china, the silverware good, and kept in the best of condition, the napery generously supplied, the glassware of good quality and well polished. The walls and woodwork are white enameled and the floor is of red tile. Two maids do nothing but keep these three diet kitchens in immaculate order. The trays are served from each diet kitchen, although the food is sent from the main kitchen on the ground floor; special diets, however, are prepared by the dietitian and two student nurses in the diet kitchen on the ground floor. Between 3,000 and 4,000 trays are served monthly.

The laundry has been equipped after plans made for the hospital by a well-known laundry machinery company. The machinery consists of a washer, an extractor, a large three-roll mangle, electric irons with boards, and a drying room, which also provides for the sterilization of all the mattresses as soon as the patients have left the hospital.

Above the power house is an isolation unit, built for the accommodation of such contagion as often develops in a hospital. It consists of the patient's

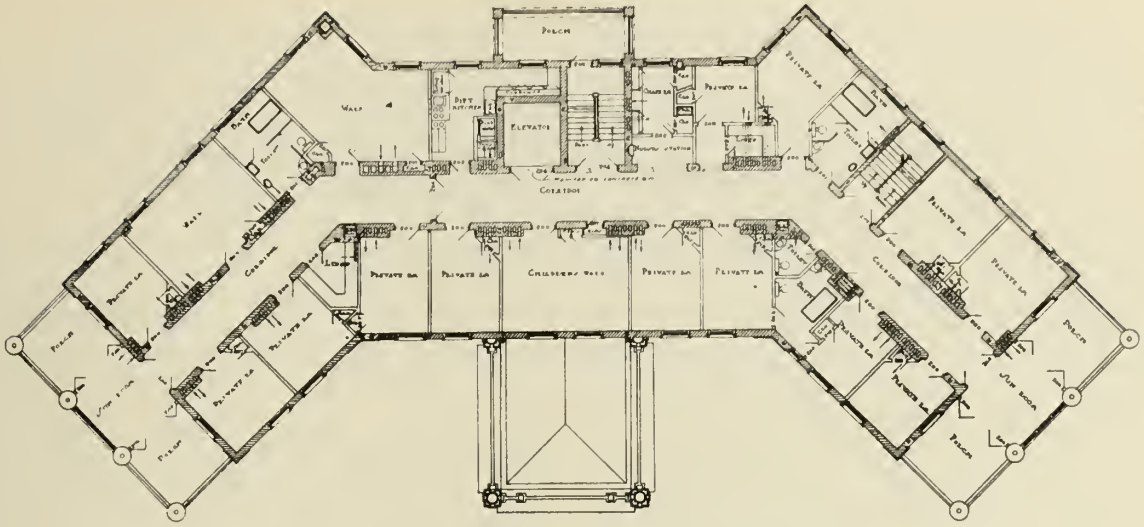


Fig. 5. Edward W. Sparrow Hospital. Second floor plan.

room, the special nurse's room with connecting bath, and a kitchenette, and is in telephone communication with the hospital. It can be reached by an adjustable outside stairway. This was built at a cost of $1,700.00 after the hospital proper had been in use and when Mr. Sparrow appreciated just what emergencies might arise.

The State Accident Fund has installed on the ground floor of the hospital one of the most expensive and best built x-ray machines and attachments. For the housing of this apparatus the hospital gets the benefit of increased patronage and derives great satisfaction in the knowledge of its up-to-date equipment and service. With the completion of the nurses' home more space, now in use, can be given to this valuable hospital service.

There is also a room for the use of the graduate nurses who enter the hospital for special patients. It may be used as a dressing and rest room during their hours off duty. It has its adjoining bath room.

The nurses' dining room is commodious, light and airy. Wholesome food, well prepared and served, clean napery, polished dishes and silver are a part of the well-regulated plan for retaining healthy, happy, satisfied nurses. There is a large class room, in which are held not only several classes and demonstrations for the student nurses daily, but chapel services every morning.

The services offered by this small, busy, general hospital are surgical, medical and obstetrical, and include the treatment of children. The children's department needs encouragement, although there are usually three or four "kiddies" in this ward.

For the conduct of this busy institution there are required a superintendent, a day supervisor, an operating room supervisor, a night supervisor, a dietitian, and graduate nurses as heads of each floor, with the training school numbering 25 nurses, a bookkeeper, two cooks, two engineers, one janitor, three laundry helpers, and five maids.

There is in course of construction a nurses' home, which will accommodate forty nurses. It has been given to the hospital by Mrs. Edward W. Sparrow, of New York City, and this substantial evidence of interest is gratefully acknowledged. The home will be modern, with a reasonable number of bath rooms. It will be heated from the hospital power, lighted by electricity, and gas will be piped in for emergencies. The walls of the night nurses' rooms will be deadened and separated as much as possible from the noises of the home. There will be two reception rooms, with built-in bookcases. The basement will be finished appropriately for large recreation room or classroom. It contains also a small nurses' laundry and trunk room.

While proper care of the patients is the first and main consideration, it is also considered important that special attention be paid to the securing of young women of good education and morals as student nurses.

The curriculum, recently suggested by the Michigan State Board of Education for Nurses, points plainly the requirements of the training school. It is necessary that the student nurses be given value received for services rendered, which is the tuition they pay for their training. Student nurses are most responsive to interest and enthusiasm shown by instructors, and it behooves the faculty to encourage in all possible ways this growing interest.

Lansing furnishes a most attractive locality for a hospital and nurses' home. It is the capital city, it is a home city, it is a college city; with the state library easy of access, with musical and literary programmes often open to the public, and with

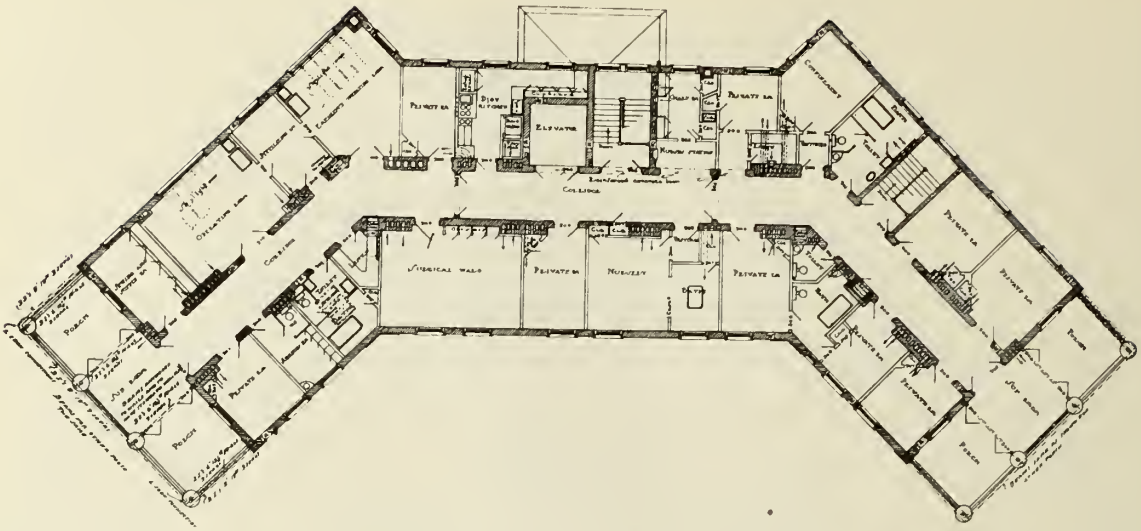


Fig. 6. Edward W. Sparrow Hospital. Third floor plan.

comfortable houses and attractive environment it is not to be wondered at that the student nurses average high in their state examinations.

Only young women, over eighteen years of age, of good morals, with one year high school credit at least, are considered. Church membership is preferred. Uniforms and books are not provided, but a monthly allowance of $6.00 and $10.00 is made for their purchase by the student nurse.

The probationary term is for two months, although the preliminary term lasts six months, during which time the nurses have daily classes in general nursing, elementary anatomy and physiology, materia medica, dietetics, solutions, English, arithmetic and ethics.

There are the usual junior, intermediate and senior classes, for the course is of three years' duration. Members of the faculty, local doctors and college instructors have charge of the classwork.

High ideals are set for the students; state registration is required of them. Monetary consideration, as an aim, is discouraged. Womanly sympathy and usefulness, and professional skill and efficiency are taught.

The Edward W. Sparrow Hospital has no staff. Each patient admitted has his own doctor. The city physician, an educated man of broad interests and humane sympathies, responds to all emergency calls, and he assigns such patients, if need be.

Here, as everywhere, there are many people who do not care to make application to the city for assistance, but who signify their desire to make small payments when possible. Their intentions at all times are the best, but force of circumstances often defeats their ability. There are those whose need is at once apparent; no needy patient nor "emergency" is ever turned away, nor any hard-luck story regarded too suspiciously. Because of these conditions, generally recognized, the hospital becomes the burden bearer. This hospital charity is willingly assumed by the board of control and is a measure of its share of the world's work.

Another fiscal year has just been closed. The reports show that at the beginning of the year there were 42 patients in the hospital; 1,205 patients were admitted during the year; 1,134 patients were discharged; 68 patients died; 45 patients remained in the hospital at the end of this year of reckoning. The mortality for the past year, therefore, was 5 percent.

## EUGENICS SOCIETY CONDUCTS STUDIES AT SING SING

### Organization Supported by Mrs. Harriman Will Undertake to Classify Criminals

The Eugenics Record Office, founded and maintained at Cold Spring Harbor, L. I., by Mrs. E. H. Harriman, has begun an exhaustive and systematic study of the inmates of Sing Sing Prison, under the direction of Dr. Charles B. Davenport. According to reports the family history of every convict will be traced and analyzed, the primary aim being to find to what general type of criminal each belongs.

Those who have associated themselves with the Eugenics Record Office favor the sterilization of certain classes of criminals and other defectives. The Board of Scientific Directors is composed of Alexander Graham Bell; Dr. W. H. Welch, of Johns Hopkins Hospital; Dr. L. F. Barker, of Baltimore; Prof. Irving Fisher, of Yale University; Dr. T. H. Morgan, of New York City; Dr. E. E. Southard, of Boston, and Dr. Davenport.

In 1912 the New York legislature passed an amendment to the Public Health Law, creating a board of examiners, with power to sterilize criminals and mental defectives in state institutions, but the application of the act awaits the outcome of a suit by the attorney general to test its constitutionality.

# THE BAKER SANATORIUM AT CHARLESTON, SOUTH CAROLINA

## A Privately Owned Institution Containing Wards and Private Rooms—Represents the Best Ideals of Southern Hospital Architecture—Its Equipment Luxurious and Complete

By J. D. NEWCOMER, Architect, Charleston, S. C.

THE Baker Sanatorium, Charleston, S. C., as it stands today, is a monument to the public spirit and foresight of Doctor Archibald E. Baker, and is the only privately owned hospital in the city.

The sanatorium overlooks the placid expanse of Colonial Lake, surrounded with its beautiful flower beds and shaded promenades at the intersection of Ashley avenue and Beaufain street. From the broad solariums and rooms of the sanatorium the panorama of the Ashley River and the wooded shores beyond afford a pleasing vista for the convalescent. This location of the sanatorium admits of the purest of air and coolest of temperatures desirable. The neighborhood being residential, the usual noise incident to the city's traffic is wholly absent. The charming exclusiveness of location enhances the value of the sanatorium and greatly inures to the benefit of both patient and physician. While the sanatorium is in a quiet section of the city it is readily accessible.

Before designing this building, Dr. Baker, accompanied by the architect, Mr. J. D. Newcomer, of Charleston, S. C., and Mr. E. V. Richards, of Bennettsville, S. C., associate, visited the most modern institutions of the south, and by incorporating all of the best features of the various institutions visited, they have evolved a building pronounced by visiting surgeons of eminence to be the most complete and convenient institution of its kind in this section.

This sanatorium was constructed with the sole purpose of building a thoroughly modern hospital for surgical, gynecological and medical patients. It is equipped with every modern appliance for such an institution. Constructed of red brick, with stone trimmings, it possesses an exterior very pleasing to the most critical eye, and an interior arrangement which a study of the accompanying plans will show to be unsurpassed for convenience and service.

The visitor on entering is ushered into a reception hall, to the immediate left of which are the general and private offices of the institution. Upon the right is an alcove reception room and leading therefrom the public parlor. Immediately off main halls on the one side are the supplies, drug and head nurse's room, while on the other side is the elevator and stairs, also the electro-therapeutic and x-ray rooms, connected by the dark room, with laboratory in the rear of the x-ray room.

In the rear of the administration portion of the building are the general wards, both male and female, and four individual rooms on each side of the hall, while the broad glass-enclosed solarium, overlooking the Ashley River, extends the full width of the building.

Fig. 1. Baker Sanatorium, Charleston, S. C.

The second floor and a portion of the third are devoted entirely to private rooms. Some of these are luxuriously appointed suites, consisting of bedroom, bathroom and private sun parlor. All rooms are "outside rooms," hence well lighted and cool. The furnishings of these rooms are not only pleasing to the sight, but what is more important, fashioned after such a design as to be in keeping with the latest sanitary principles. The beds are either white or of brass, and the furniture is of mahogany or circassian walnut, producing a beautiful effect.

In addition to a very complete obstetrical room, equipped with the best appliances and instruments, there are two operating rooms. They are

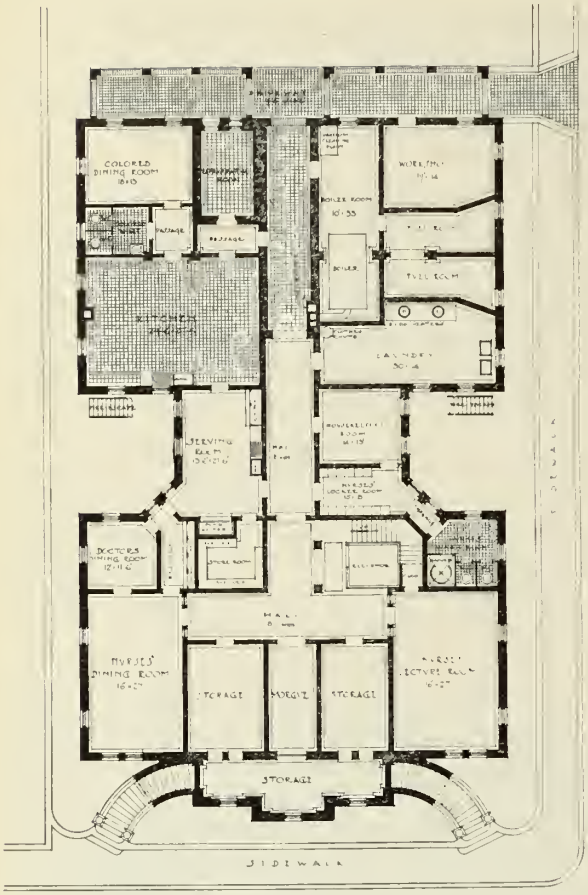



Fig. 2. Baker Sanatorium, Charleston, S. C. Basement plan.

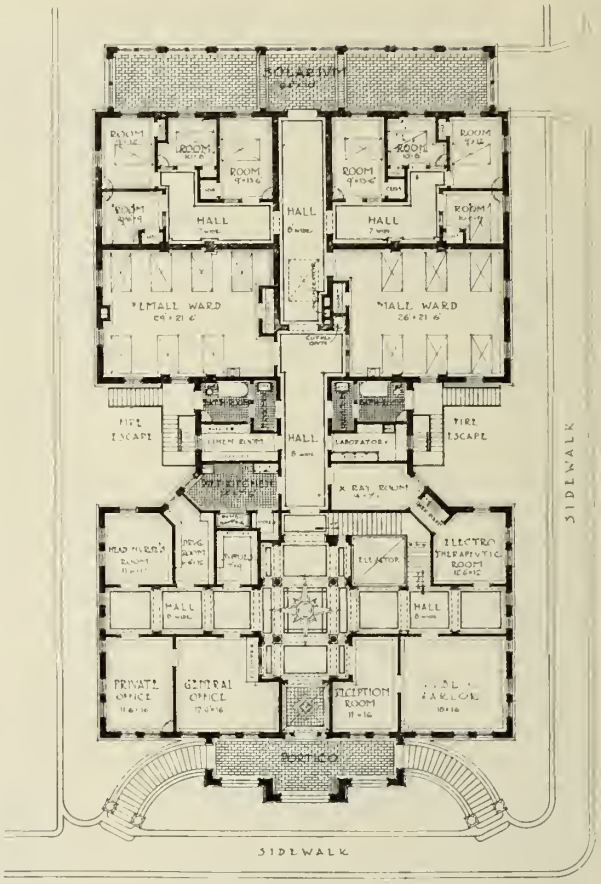



Fig. 3. Baker Sanatorium, Charleston, S. C. First floor plan.

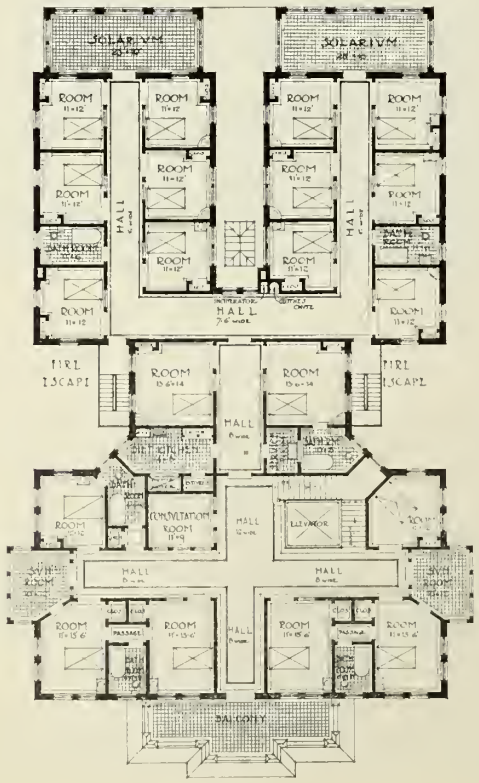



Fig. 4. Baker Sanatorium, Charleston, S. C. Second floor plan.

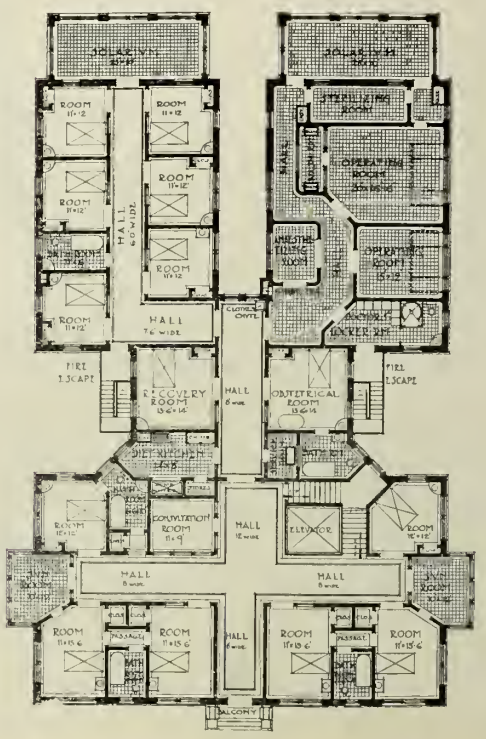



Fig. 5. Baker Sanatorium, Charleston, S. C. Third floor plan.

on the third floor, on the north side, thoroughly isolated from the rest of the building and admirably lighted both by sunlight, gas and electricity. The operating tables are of two designs, the best and most modern used in science and surgery. Every detail in these rooms, no matter how small, has been worked out with the greatest of care. Adjoining these operating rooms and most convenient to them is the anesthetizing room, which is in the hands of an expert anesthetist, whose entire time is devoted to the work. The wash-up room is separated from the major operating room by a plate glass partition, thus doing away with any commotion in the operating room, and yet the patient is always under the eye of the surgeon. The sterilizing room, recovery room and pathological laboratories for the quick examination of specimens are all conveniently grouped around the operating rooms.

Patients can enter the sanatorium through an ambulance driveway in the basement, which leads directly to the elevator.

The main kitchen and serving pantry are located in the basement, completely isolated, yet connected by dumbwaiter with the various diet kitchens on each floor above. Adjacent to the kitchen are the dining rooms for the doctors, nurses and help, also a modernly equipped refrigerator room, with the balance of basement arranged for the housekeeper's room, nurses' lecture, locker and wash-up rooms, store rooms, morgue and mechanical department.

The sanitation of this institution is perfect. There are no base boards or square edge trim to collect the dust and germs; the windows are provided with deflecting boards, thus admitting the breeze, yet precluding the possibility of injurious drafts.

The entire building is lighted by electricity and gas, heated by a hot water system, provided with intra-phone system connecting every part of the building, besides the local and long-distance telephones. On each floor are private consultation rooms for the visiting physicians.

In connection with the sanatorium is a training school for twenty-five nurses, whose home is just across the courtyard from the main building. This cottage was constructed with special reference to the comfort and convenience of the occupants, and homelike and comfortable.

## THE TRAINING OF SUPERINTENDENTS OF SMALL HOSPITALS

### Pre-nursing Education Most Important—Broad Nurse Training of Course Essential—Survey of the New Job—Mastering the Details—Assistance—Rising to Emergencies

By ETHEL J. JOHNS,
LATE SUPERINTENDENT M'KELLAR HOSPITAL, FORT WILLIAM, ONTARIO

IN considering the question of the special preparation of a woman intending to take charge of a hospital of one hundred beds, it is presupposed that she has received a fairly good preliminary general education. If to this be added one or more years of collegiate work she will be the better equipped for her task. Her professional training should, preferably, have been received in a large hospital, but it is most desirable that she should also have had a period of service as assistant in a smaller institution. Lacking this experience, it is frequently difficult for her to grasp the changed conditions with which she will be confronted.

Before proceeding to suggest specific methods of preparation, it will be necessary first to indicate the broader aspects of the situation which it would be well for her to study as her first step in preparation. Unfortunately, this step is seldom taken—only the narrow professional phase of the matter is considered and the broad and comprehensive view is frequently never striven for.

It would be well for her to study the community in which she intends to do her work from the following points of view:

(a) *The social aspect.* Under this head would come the kind of community, whether industrial or rural; the type of patients likely to present themselves; the various public health activities and their relation to the hospitals; the presence or absence of various organizations likely to be of assistance to the institution.

(b) *The educational aspect.* From this she would gain some knowledge of the sort of pupils likely to be available for her training school, and of the kinds of schools or collegiate institutions in the community, with a view to possible cooperation with them in the solution of the educational difficulties with which she will be forced to contend.

(c) *The medical aspect.* This would include a survey of the kind of professional work being done by the local physicians, their attitude towards the hospital, the nature of their medical school or society, and their standing in the community generally.

(d) *The financial aspect.* She should inform herself of the sources of income of the hospital, and of the nature of her responsibility in this important field.

Having made a general survey of the whole field, she may then study in detail the problems she will be called upon to meet and to solve. A brief outline only can be given, and an attempt will first be made to present those which rightfully belong to her, leaving those which have been unjustly thrust upon her for later consideration. As efficient administration depends on proper organization, it will be essential for her to comprehend from the beginning the nature and activities of the governing body, whether this be a municipal commission, board of directors, or private corporation. The relation of this body to the community at large, to the hospital, and to herself should be given careful study.

It will be necessary for her to formulate a well reasoned out plan for internal administration, with due regard to the conflicting claims of the various departments, and a clear vision of their mutual interdependence. The training school will naturally be her first thought. Not only should she be able to arrange her force in the wards in such a manner that the efficient nursing care of the patients may be best assured, but she must also bear in mind the fact that the interests of the individual nurse must not be sacrificed to the convenience of the institution by keeping her too long in one service. The possible range of experience in a small hospital is restricted at best, and every possible use must be made of every phase. The superintendent's task as regards the teaching of the so-called theoretical subjects consists in the arrangement of a suitable curriculum with due regard for balance, relevancy, and sequence. Having secured this, she should strive to obtain such teaching assistance as can be afforded, bearing in mind the previously mentioned possibilities of co-operation with local teaching institutions. It is desirable that she, herself, should be cognizant of the principles of good teaching, and be able to give practical demonstration of such knowledge by the manner in which she conducts the teaching of such subjects as it may be necessary for her to assume herself. It will probably devolve upon her to supervise and direct the social activities of the residence, and it need hardly be emphasized that a tactful woman may exert a most beneficent influence.

The housekeeping department will probably be under her direct control. She should familiarize herself with the workings of every branch of it, although she should insist on adequate assistance in this most important phase of hospital activity.

In the matter of finance, although she may not be expected to assume full responsibility, it will be necessary for her to be conversant with approved methods of hospital accounting, and to have a fair knowledge of office methods. The buying of supplies will probably devolve upon her, and a close study of the various methods of buying—by contract, in the open market, etc.—will be of great assistance to her in performing this important function intelligently.

So much, then, for some of the problems to be met. It remains to be seen what means may be taken to prepare for their solution.

The following suggestions might be made regarding a preparation which might in part be conducted in any good training school.

First, a thorough study of the organization of the parent institution in the broader sense, with a comparison of it with similar institutions in the community. An investigation of the housekeeping problem at first hand, with, if possible, a short period of service in every department, including the laundry, would be of the greatest practical value, and, in addition, some experience in the principles of institutional buying, as shown in the steward's department, should be obtained. It is unfortunately true that the large training schools do not, as a rule, afford the student as good an opportunity for advanced study as they might.

It is possible also to secure university training, which is invaluable to a woman expecting to occupy the type of position under consideration. If for any reason such training is not available, many agricultural colleges and collegiate institutions throughout the country offer excellent short courses in such subjects as household economics, which supplement admirably the deficiencies of the average hospital training. Quite apart from their practical value, any such courses would be desirable in that they tend to bring the intending superintendent in touch with educational activities in other fields than nursing.

Various special duties have been demanded from the superintendent of very small hospitals, simply because it is apparently difficult to find persons in small communities capable of assuming them. The justice of such demands is questionable, but the fact remains that she may be, and often is, expected to assume the role of pharmacist, anesthetist, or even x-ray operator.

It would, of course, be possible for her to obtain the necessary experience in any one of these subjects, and in a sense it might be well for her to possess such training. The power to rise to any emergency is an important weapon in her arsenal, the possession of which may mean the difference between success and failure.

## THE MOST FAMOUS HOSPITAL IN THE WORLD—OLD BEDLAM

### Founded More Than Six Centuries Ago, It Is Now Abreast of Modern Medical Science—It Has Led the Way in Many Reforms—Famous Characters in History Have Been Identified With It—Henry VIII Stole It—George III Was Confined in It—Hogarth Illustrated Its Horrors

IT is contradictory that while we are accustomed to view an American hospital built and equipped ten years ago as no longer modern, in the commonly accepted definition of the term, one of the great hospitals of the world, living and flourishing and performing a herculean service to the sick today, is one of the most forceful connecting links between our own time and the gray dawn of medievalism.

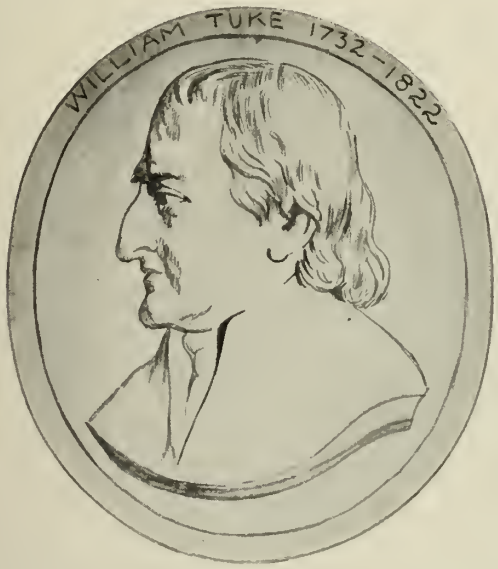



Fig. 1. William Tuke. The Quaker Friend of Bedlam who led the way to a revolution in the care of the insane.

A decade serves to paint the walls of our own cherished hospitals with the rime and weathering and wear of time; what shall we say of six centuries as the life span of a hospital? Such is the life story written in the walls of Bethlehem—Old Bedlam, that stands in the heart of London, as vigorous and valiant and militant as though only yesterday the boasted "efficiency" of twentieth century civilization had lavished its offerings in its creation.

"To all archbishops and bishops, abbots and priors, and to all the faithful children of God! Be it known, that the Brothers of Bethlehem represent a monastery which offers shelter to the poor, the stranger and the pilgrim, and affords succor to all Christians in affliction. If peradventure the Brethren shall come unto a castle, or village, which has been lying under an interdict, the churches shall be opened and Divine services celebrated there one day in the year at the glad sound of their coming!

"It is our will and pleasure that you permit the Brothers to address the people in your churches, and to ask alms of them without let or hindrance. Furthermore, we, relying upon the authority of Almighty God and of the blessed apostles, St. Peter and St. Paul, do relax forty days of any penance, enjoined in the case of anyone, who shall succor the Brothers out of the wealth which God has given him, and shall enroll himself in so holy a fraternity, contributing annually to their funds."

The above encyclical, given under the Papal seal, on February 3, 1245, by Pope Innocent IV

Fig. 2. James Norris, an American, whose confinement and punishment created a furore in London, and revolutionized the care of the insane. From an old etching.

to Godfrey de Vico, Bishop-elect of Bethlehem, was destined to found an institution known to the whole civilized world as "Bedlam."

In the year 330 A. D., or thereabouts, Constantin, inspired by the faith of his mother, Helena, built a magnificent temple or basilica about the cave of the Nativity in Bethlehem and the Brothers of Bethlehem became its custodians. This was the second of the Christian orders to be created. St. John the Lesser was its founder.

The changing fortunes of the Crusaders rose and fell for centuries under the sacred edifice, and many Christian soldiers laid down their lives at its doors in their efforts to worship at its shrine. Baldwin was crowned the first Latin king of Jerusalem in the temple in 1101; Saladin, Khalif Omar, the Saracens and Tartars, took it and lost it; it was drenched with blood for nine centuries—and yet it stands today almost as Constantin left it, though Justinian brought painters and sculptors

Fig. 3. Trading on insanity.—Tom o' Bedlam, a beggar, who pretends that he has been in Bethlehem Hospital. In this character he made a good deal of hay while the sun shone for him, in the sixteenth and seventeenth centuries.

and mosaists to ply their arts in its further beautification. When the war clouds disappeared the Christian Brothers of the Order of St. Francis found the temple abandoned and these proceeded to occupy it. Many hospices of the Order were founded in Italy and France. What wonder was it, therefore, with the Pope's Encyclical in their hands, the followers of the kindly and gentle St. Francis were made welcome in England! One of the first friends they found was Simon FitzMary, a stalwart and militant sheriff of London town, who gave them land and aided all their enterprises in the founding of Bethlehem Hospital.

On the 13th day of October, 1247, Henry III, on the Feast of the Translation of Edward the Confessor, passed with a procession from St. Paul's to Westminster Abbey, carrying under a canopy a phial of the blood of Christ, sent by the Templars. He was accompanied by Godfrey, Bishop of Bethlehem, and when they were arrived at St. Botolph's, Bishopsgate, incense arose about and holy water fell upon the land given by Simon FitzMary, the sheriff. An oratory was erected; a holy relic hallowed it, it was anointed with holy oils and censed with a cross of smoke, and prayer and antiphon and holy water consecrated it to the service of the Son of Mary. Today the land which Simon offered on his knees at the altar, "to the Church of the glorious Virgin Mary of Bethlehem," is situated about Liverpool street and its three great railway stations. It was a place of marshes and moors and gardens. Conditions have changed, Bethlehem was robbed and cheated by kings and courtiers. The last of the masses for Simon's soul was sung many centuries ago, and even his name is forgotten except by the antiquarian, but Bethlehem still flourishes and as Simon would surely wish it, it ministers to the sick and the afflicted.

There have been three buildings of Bedlam, the first as just related, which was more a monastery than a hospital, the second building completed in 1676, a real hospital, "very magnificent," as Evelyn, a connoisseur, called it, which excited the admiration of contemporary culture and the unstinted praise of foreign visitors. This was built on the city moat at the edge of Moorfield. The third structure, illustrated on the front page of this issue, was begun about 1812. The present dome was built in 1844-46.

Year after year changes have been made in the architecture of the historic pile, new additions have been made, new wings built, old ones changed, without doubt each change registering a step of progress in the science of medicine.

During all these six hundred years of the existence of Old Bedlam it has been the plaything of political mountebanks, quacks and crooks of every conceivable character. Henry the VIII stole the institution from those to whom it had been entrusted and made of it a political bailiwick for the benefit of his courtiers and favorites. One of the earliest whom he placed in charge of the institution was Geo. Boleyn, brother of one of his wives, Anne. George was executed in the Tower, not on account of misdemeanors at Bedlam, but that might well have been.

After long years the city of London got control of Bedlam under contract with the king, and it was in better hands.

How many historic figures played their part in life about the old priory! Cowley, the poet, returned from a visit there, "not only melancholy, but sick with the sight. To weigh the matter

Fig. 4. Delusional insanity.—He wanders along the road, driven by forces invisible, yet irresistible. The powers of darkness (moon, bat and toad) seem leagued in hostility against him, and man "whips poor Tom from tithing to tithing."

justly, the total deprivation of reason is less deplorable," he found, "than the total deprivation of it in the thousands I meet abroad." Cromwell's porter, Daniel Curtis, was an inmate there and founded some wise philosophies during his moments of contemplation which he rehearsed to his famous master.

Dean Swift one day "set out at ten o'clock to the Tower and saw the lions; then to Bedlam; then dined at the chop house behind the Exchange and concluded the night at the Puppet Show."

One who was supposed to be an inmate wrote a story called "Bedlam Broke Loose," in which was described a pandemonium within the building one day when Lord Gerard and his mother visited there.

Dickens's conception of Sairey Gamp and Betsy Prig was formed from what he learned of the attendants at Bedlam.

Hogarth's rake finished his career in convulsions there. Shakespeare found many of his scenes there. Dean Swift was a governor at one time, and his principal act of governorship seems to have been an order to confine there Beaumont, the playwright. In the time of James the First, old Percy's guests "paid ten shillings to see the show at Bedlam." Jack Sheppard's mother was a patient there.

John Wesley was refused permission to visit Bedlam; he went to visit a young woman, and says of his experience, "I had not talked to her long before someone gave me to know that none of the preachers were to come here. So we are forbidden to go to Newgate for fear of making them wicked, and to Bedlam for fear of making them mad." Sairey Gamp told poor old Chuffey how the nursing was done in Bedlam. "You want," said Sairey, "a pitcher of cold water thrown over you to bring you round; and if you say so, Betsy Prig, who

Fig. 5. Jack Sheppard visits his mother in Old Bedlam.

has nussed a 'many lunacies, and while she knows their ways, you would have it, too. Spanish flies is the only thing to draw the nonsense out of you, and if anybody wanted to do you a kindness they would clap a blister of 'em on y'r 'ead and put a mustard poultige on y'r back."

But there were many reforms that came out of Bedlam. Dr. Edw. Tyson instituted many reforms in the care of the insane on the halls of Bedlam. It was he who first suggested that a diseased mind

Fig. 6. The insanity of George III.

might have been preceded by a diseased body. He found also that many cases had to be "fed up on flesh-forming foods and given hot and cold baths." Medicines, proper to physical disease, were administered under the superintendence of a nurse—the first real nurse installed at Bedlam.

Perhaps the most eminent patient that Bedlam ever had was George III, who groped his way in blindness about its halls for years after having lost the American colonies, and who was removed from the famous hospital only to be allowed to die in Windsor Castle.

Strange as it may seem, the brightest day in Bedlam's history was connected with an American patient who was confined there, James Norris. Norris was in chains with an iron collar welded about his neck and fastened to a post; his body was chained to the floor and rivets and heavy chains made it impossible for him to more than move. While Norris was there in the spring of 1792, William Tuke, a tea merchant of York, suggested to the Society of Friends, of which he was a member, that insanity had hitherto been treated by "irritating forms of compulsion which tended to exacerbate the disease." He persuaded the Friends, therefore, to try the experiment of treating the irrational "as if they were rational patients and to dispense, as far as possible, with irritating forms of coercion."

It was a year later that Phillippe Pinel, the great Paris surgeon, struck the chains from off the bodies of the patients of Salpetriere; but Tuke, of Bedlam, got no credit for that great reform.

The confinement of James Norris created a remarkable excitement in London, perhaps because he was more tightly and rigidly and harshly chained than other patients had been, or perhaps because the beneficent Tuke happened to see him and to bring his case before the public.

The horrors of Bedlam have been perhaps the greatest horrors the world has ever known. Its history has been woven into the history of civilization in a way that perhaps has not happened to any other structure in the world; and from out its hallowed walls have come some of the greatest reforms in the care of sick.

All this wonderful story of Bedlam, and many, very many, interesting incidents not recorded here, are told by Dr. Edward Geoffrey O'Donoghue, chaplain to the hospital, in a book recently issued, called "The Story of Bethlehem Hospital from its Foundation in 1247." Dr. O'Donoghue has done a wonderful service in bringing together such a mass of interesting historical data.

Fig. 7. A corner of Bedlam today.

### Tonsil and Adenoid Operations at Children's Clinics of New York Department of Health

EXAMINATIONS AND SAFEGUARDS

1. The child is examined by a physician to note the presence of abnormalities that demand operative procedure.

2. A complete physical examination is made to make sure that the patient is a safe subject for operation.

3. The parent or guardian is interrogated as to the presence of contagious disease in the child's family.

4. A history card is made out for each child. On this are recorded clinical notes describing the conduct and condition of the child (whether lively, cheerful or reverse), condition of nutrition, appetite, intestinal functions, presence of pulmonary signs, pulse, respiratory rate and temperature, and whether the child sleeps well. A specimen of urine is collected and examined before the child is operated upon. The record shows the specific gravity, the reaction and the presence or absence of albumen as detected by the heat and acetic acid test.

5. A child is not received for operation who shows a condition of seriously lowered vitality or has any organic disease. These children are referred to a physician for treatment and are requested to return later.

6. Upon admission to the clinic, the children are undressed and bathed and put in hospital garb. Younger children are bathed by the nurse, older ones under the direct supervision of the nurse.

7. The nasal fossæ are irrigated the night of admission and again on the morning of the operation. One quart of warm normal salt solution is used for these nasal irrigations and the soft rubber hose of the douche bag is inserted into the nostrils.

8. The day preceding the operation the children are kept quiet; are made to retire at 7 p. m. in winter months and 8 p. m. in summer months; are instructed how to inhale gas, and are admonished to be brave in the operating room for the sake of the benefits that will accrue from the operation.

9. The day of the operation the children are held in the playroom, and so far as possible their minds are diverted from the operation. About six a. m. they receive a bowl of cereal and a glass of milk. The history cards are written up, stating how they passed the night, condition of appetite and other functions. The morning temperature is taken by rectum. If this is found to be 99.5° F. or over, with a pulse of 120 or over, a special record of the fact is made in red ink. Such children are not operated upon that day.

10. The nurse makes a special inspection of the exposed skin surface and notes on the history card the conditions found, viz., whether clear or otherwise.

11. The operating room nurse accompanies the child from the playroom to the operating room, sterilizes the instruments and sees that all paraphernalia used at the operation is clean and sterile.

12. After operation the orderly carries the child to the bed, and the ward nurse takes charge, and stays with the child until the active bleeding stops. She takes the pulse rate and respiration rate and watches for swallowing symtoms. A pulse rate of 100 to 120, of poor character, thin, irregular, with the swallowing and suggestive signs of progressive weakness and air hunger, demands the presence of the operating surgeon at once.

13. The operating surgeon and anesthetist are available for four hours after the last child has been operated on. They must remain on duty after the operation and remain in the clinic until each child may be said to be out of danger. Emergencies occurring after a four-hour interval may be referred to the anesthetist or any other inspector on duty. The assistant director is notified at any hour of cases of serious bleeding.

14. The registrar is required to report in writing any instance where the operating surgeon or anesthetist fails or is negligent in his duty.

15. The child is kept in bed from 10 or 10:30 a. m., the time of day the operation is performed, until 7 a. m. the following morning.

16. Bedside notes and the condition of the child when discharged are recorded in full.

## SOCIAL SCIENCE CONGRESS FOR CHICAGO

### Central States Division Holds First Meeting to Take Stock and Plan Work in Several Fields

The first Central States Conference on Social Hygiene will convene in Chicago, October 25th and 26th of this year. The sessions of the Conference will be held in the Florentine Room of the Congress Hotel at the corner of Michigan avenue and Congress street. The first session of the Conference will be held in the evening of October 25th, and will be given over to discussions of general features of the social hygiene movement. In the forenoon of the following day the moral and educational features of the social hygiene movement will be taken up; in the afternoon the medical and public health aspects will be treated; the evening session will be given over to discussions of the legal and administrative phases.

The field to be covered may be indicated by the following partial list of subjects:

The Correlation of the Social Hygiene Movement with Other Public Health Movements.
"Eugenic Laws," so called.
The Moral Value of the Modern Hospital.
Reporting of Venereal Diseases.
Public Venereal Clinics.
Prostitution and the War.
The Economic Loss Due to Prostitution.
The Administration of the White Slave Traffic Act by the Federal Government.
The Success of the Injunction and Abatement Law.
The Education of Public Opinion in Regard to Social Hygiene.
The Present Status of Education with Reference to Sex.
The Newspaper as a Moral Educator.
The Progress of the Social Hygiene Movement in the United States.

An announcement just issued states the purpose of the Conference as follows:

It is not the object of the American Social Hygiene Association to make the Conference a large gathering, although the public is cordially invited to the meetings. It is the object of the Conference to provide an opportunity for persons interested in education with reference to sex, the control of venereal diseases, the suppression of prostitution, and in the upbuilding of public morality and health, to discuss with the leaders in these various phases of the social hygiene movement, such problems as may be pressing upon their respective communities. There will be a general "taking of stock," an estimation of our progress, and a survey of the ultimate meaning of events and ideas in the field of social hygiene. There will be opportunity for the expression of opinion and for the relation of experiences bearing upon the subjects under consideration.

All persons interested in any phase whatever of the social hygiene movement are invited and urged to attend the Conference. The field secretary of the Central States Division is glad to give information regarding the Conference. Address 1949 People's Gas Building, Chicago, Ill.

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A bureau recently established by the U. S. Public Health Service is investigating the relation of workers' fatigue to temperature and humidity in the mills of Pittsburgh.

The MODERN HOSPITAL

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Contributors, subscribers, and readers will find important information on advertising page 34.

## Hysteria and the Public Welfare

Some five or ten years ago a small epidemic of foot and mouth disease broke out in the cattle in New Jersey or territory adjacent thereto. The papers published small brevities about it. A few well-informed men warned the country of its dangers, not only to live stock but to the human family.

Nothing was done about it, of course; the warnings went by as the idle wind and as little heeded.

All of a sudden, a year or more ago, the disease broke out with violence and virulence while the Chicago Stock Show was going on, and while there was assembled at the stock yards in that city the greatest aggregation of valuable live stock that had ever been brought together. Then the government veterinarians and sanitarians grew wildly hysterical and they have been going about the country destroying stock valued at millions of dollars, without the least compunction and evidently without the slightest knowledge of whether it was necessary to destroy this stock or not.

Recently the writer of this editorial visited one of the finest stock farms in the United States and found there fifty head, more or less, of fine cattle that had just been released from quarantine in the Chicago Stock Yards. None of this herd had died from the foot and mouth disease, although a few of the calves had died from pneumonia incident to the bad conditions in quarantine. Some of the cows, many of them worth thousands of dollars each, had given birth to calves while in quarantine. Only a few of the herd ever had any symptoms of disease and all of them are now apparently perfectly well; and yet thousands of just such cattle as these have been indiscriminately slaughtered during the past year by government agencies.

A few days ago there were symptoms of the foot and mouth disease in a few of the famous Guernsey herd of Mrs. Scott Durand, of Lake Forest, Ill., and it was decided by the government agencies that the whole herd must be immediately slaughtered, and four or five officers appeared at the farm one morning at daylight to carry out this determination. Fortunately, Mrs. Durand had not become affected with the same hysteria that had taken hold upon the government veterinarians and she took the wise precaution to obtain a court injunction to prevent the destruction of her herd, and the matter now rests as a court proceeding.

This live stock panic and full-fledged hysteria on the part of government agents would not concern us but for the fact that it is only part of what has apparently become a national trait in this country, viz., to procrastinate in the face of the plainest kind of warnings concerning calamities of one sort or another, and then grow wildly hysterical when the time has come to act deliberately to prevent a catastrophe. This general attiture of the public toward its vital problems is all so vastly different from the attitude toward these same problems by one section of the Public Health Service that attention ought to be called to it.

The bubonic plague is a terrible thing, and yet when it broke out with violence at New Orleans eighteen months ago there was not the slightest disturbance anywhere; no hysteria, no panic, no interruption of business and no interference with the rights, privileges and duties of the public. The Public Health Service of the government got on the ground immediately and began work in a quiet, systematic and orderly fashion, and has maintained that work up to the present time and has wiped out the plague and every semblance of it. During that time almost the whole city of New Orleans has been rat-proofed, disinfected and cleaned up. It has been made impossible for rats to enter the city by means of the shipping and more than half a million rats have been caught, killed and microscopically analyzed; hundreds have been found infected with the bubonic microorganism, but for nearly one year, now, not a single human patient has been infected.

A few days ago a woman died in Chicago and it was said she had all the symptoms of the foot

and mouth disease, and yet some small accident interfered with the making of an autopsy, so that the woman was buried without its being known whether or not she had a disease that might be the beginning of a very bad epidemic—and not the slightest excitement was created by the occurrence and apparently no serious effort was made by anybody to ascertain the facts in the case. Now if there happen to be two or three more cases, or half a dozen, suffering from the same symptoms from which this woman died we may expect the community to be panic-stricken and there will come a demand for the expenditure of unheard of sums of money, and the activities of numerous agencies, whereas, if just a small amount of common sense were employed in the first instance and the proper things done, the matter could be well in hand as routine practice in public health work.

### Buying Cheap Things for Hospitals

Every hospital is doing what it can to keep its running expenses down to the lowest possible point consistent with good service, and this policy seems to be all the more necessary in these days of high prices and more or less uncertain income from subscriptions. There comes a point in the effort at economy, however, where low price must be at the expense of the future, and where low price ceases to minister to economy.

The writer knows one hospital that was built five or six years ago, in the planning of which the board of trustees, headed by a successful merchant, took the ground that hospital buildings were costing entirely too much, and they purposed to show that a splendid hospital could be built at a cost of less than 20 cents per cubic foot —the cost, by the way, of a good factory building that the head of the board had just recently completed.

A good deal of ornamentation was put on the front of the building, and the "show places" were accentuated in the architecture, but cheap iron piping was used in the plumbing and steam fitting; cheap fixtures were used; cheap paints were put on the walls, over cheap plaster; the veneer doors looked fine, but the cost was exceptionally low. The hospital was completed at a remarkably low price, and the board of trustees were lauded to the skies and held up as examples of what a disinterested group of successful business men could do by cutting out graft and using business judgment.

Before two years were past the hospital looked fifteen years old, and repairs, alterations and renewals were monthly features in the balance sheet. Today the plumbing has become all but useless; the veneer is bulged and split on nearly every door; the floors are a disgrace, and, of course, the paint all over the house was gone long ago and replaced by the same board with equally cheap stuff, which, in its turn has been washed and worn off.

If that board of "business men" had put in good material in the first place, their hospital would have run along practically without repairs or renewals for several years, and for ten or fifteen years the upkeep should have been negligible.

Then in regard to medical and surgical supplies and foods: poor instruments, badly made; cheap syringes, water bottles and rubber goods; shopworn, vulcanized rubber gloves; large mesh, light weight gauze; short fiber cotton poorly absorbent; there is enough waste on all these commodities to more than pay for good materials—to say nothing about the inconveniences due to accidents in the use of poor stuff.

There can be no question about the desirability of using the best of foodstuffs. Without considering the necessity of providing sick people with wholesome foods and nurses and interns with attractive, appetizing dishes for their health's sake, the question of economy alone would settle the question in favor of quality. There is enough waste on poor food supplies that must be thrown away to more than pay for good stuff.

So, taking the whole problem, and from any viewpoint, there is no money to be made buying cheap products, and everything to be gained by buying the best of its kind.

### Women on Hospital Staffs.

The recent statement by a member of the faculty of Harvard Medical School that "women are not temperamentally and physically adapted for general practice and research work" seems to have occasioned a good deal of excitement in medical circles, and the returns up to date show that there is almost a unanimous sentiment against the Harvard professor's conclusions.

The New York *Sun* and other lay publications are calling upon hospital trustees, and especially on hospital auxiliary boards of women, to increase the number of medical women on their scientific staffs and thus begin to show that women *are* temperamentally and otherwise qualified to serve as clinicians. Some women doctors, in commenting on the Harvard professor's statements, have told about the difficulties they find in being received not only on hospital staffs but in postgraduate schools and other places where clinical experience was to be had.

We are not attempting to speak on the general proposition of the qualifications of medical women and we have no desire to enter the controversy, but there is one phase of this topic that seems to have been suggested by the New York *Sun* and upon which we might say a word or two.

There are a few hospitals in this country whose staffs are made up entirely of women, mostly maternity and children's hospitals, and there are a few general hospitals that have a small sprinkling of women among the staff members.

There are, no doubt, many women of just as broad views and well-founded training as men, and who can hold their own with men wherever they are placed, but it may be said without fear of successful contradiction that hospital staffs made up exclusively of women have not usually been happy in their careers. One of these institutions just now in mind and in which there is a strong, well-balanced woman superintendent, has been in turmoil and discord for years, and occasionally methods that savor much of the political mass meeting have characterized their staff conferences. It is said that in this particular hospital the women are jealous of each other in little things, that they meddle with the hospital administration as to details, and that they keep things generally in a ferment.

It is notorious that women superintendents of hospitals look with grave concern upon the advent of a woman member of the staff; and if women have been kept off of medical staffs of hospitals in this country, it has not been due to disinclination on the part of men trustees or men staff members to give the women a chance, but it has been due far more often than otherwise to open or insidious protests from the women superintendents.

We agree that women ought to have broader opportunity in our hospitals, and that they ought to be encouraged to enter clinical work, where their finer sensibilities and even their intuition, could mean so much to the sick; but these women have something to do also, to make their presence welcome; they must not interfere with hospital administration. They have nothing to do with the kitchen or the linens, or the dish washing, or the floor scrubbing, or the house furnishing; that is the privilege and duty of the superintendent; she is paid for it and cannot divide her responsibility with staff members, whether they be men or women.

Moreover, it seems to us, and we make the suggestion in all kindness and sincerity, that if medical women would cease to regard themselves as always on the defensive, and if they would cease to go about looking for trouble in hospitals and apparently looking for someone to insult or be discourteous to them, and would settle themselves down to the plain work of practicing medicine, taking care of their patients, performing the services that are theirs by right of their profession, and spend their time in the investigations and researches that would give them a better insight into the clinical side of their profession, they would make more progress in clinical medicine, and certainly more of them would be welcomed on hospital staffs.

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**Hospital Construction Suspended by the War**

There are perhaps one thousand new hospitals projected or planned, or for which contracts have been let, at the present time. Nearly all activities in this field have been suspended owing to the war in Europe. Funds have been held up; those who are usually able and willing to give toward hospital construction are declining to do so at the present moment because of financial uncertainties due to the war.

Is it supposed for a moment that because a few million human beings across the world have gone mad and are destroying each other that the peace plans, health preservation and the routine rules of living must all come to an end?

This country was never more prosperous than it is today; the future never looked brighter, and political disturbances and war clouds will come and go, but the permanent well-being of our people depends on good care for the sick and the proper coordination of health activities for the well.

We can easily work ourselves up to a mental attitude where the direst calamities are just around the corner—but we can also practice a little sanity, keep our feet on the ground and go about our way doing the every-day things of life, as it is our duty to do, and we are more likely in that way to keep free from the turmoil and strife over the seas.

So let us get our money together, complete our plans, go on with our construction, equip our new hospitals and prepare to take care of the vast millions of people who must still receive incompetent care and be deprived of many of the auxiliaries in diagnosis and treatment of disease which are now at the hand of medical science. Let us sober up and get down to business in our hospital activities—and all will be well.

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The fees received for making out certificates for the state industrial commission patients in the Cleveland City Hospital will, in the future, be devoted to the establishment of a medical library in that institution.

# HOSPITAL, MEDICAL *and* SPECIAL MEETINGS

## Organization of the Ohio Hospital Association

BY GEO. V. SHERIDAN.

Of the Ohio State Medical Journal, Special Correspondent of THE MODERN HOSPITAL.

Problems of hospital management, comparatively new to the hospitals of Ohio, inspired the formation at Cedar Point on August 25 of the Ohio Hospital Association.

Responding to an informal call issued by Dr. E. R. Crew, Miami Valley Hospital, Dayton, representative executives of about forty Ohio hospitals assembled at the Point on August 25, and after a lively two days' session completed an organization which promises to become of considerable value to the hospitals of this state in meeting some of the newer problems of hospital administration.

Probably the most important subject under discussion was the pending registration of nurses and its consequent effect upon the hospitals of the state, through the necessary establishment of uniform standards for nurses' training schools. Discussion of the many intricate points involved in this question consumed a large portion of the time. Dr. George H. Matson, secretary of the state medical board, which is charged with the enforcement of the registration law, and members of the nurses' state examining committee, were present and participated in the discussion. A resolution was adopted declaring it to be the sense of the new organization that the new law is in the interest of both the public and private hospitals of Ohio, and requesting that the board exercise diligence in seeing that the interests of the small as well as the large hospitals be carefully considered. The resolution further pledged the association to help the various hospitals so to organize their training schools as to enable them to comply at least with the minimum requirements to be established.

The Association pledged its hearty cooperation to the state medical board in effectively working out a plan which will increase the efficiency of their nursing service.

Hospital problems arising from the administration of the workmen's compensation act were also discussed at the meeting. One of the functions of the new organization is to promote better cooperation between the medical department of the commission administering this act and the hospitals of the state. While in the main the hospital executives reported that workmen's compensation has been an improvement over the former system of caring for industrial accidents, they reported several abuses of the system that have developed. A free discussion of these on the floor of the convention indicated that the hospitals generally would materially profit by systematic exchange of facts and cooperative effort. For instance, it developed that some hospitals were being paid a $5.00 fee for use of the operating room, while others were not aware that such a fee is allowed, and had not been collecting it. Also, various plans were discussed of meeting the arbitrary ruling of the commission which established a fee of $15.00 per week as the maximum allowed for hospital services in all cases. This in many instances is a serious problem, as the commission does not allow for extra service rendered and its low maximum makes it impossible, in many cases, to show a profit or even to pay expenses.

The executives were unanimous in condemning the $200.00 limit for complete medical attention, which was written into the law. Numerous cases were reported—usually broken backs—where the $200.00 fee did not cover even the nurse's fee, and worked a consequent injustice upon the surgeon and the hospital. This Association will join with the state medical society, and with all organizations which have any intelligent idea of this law, in requesting the next legislature to modify this limit.

The rather confusing rulings of the United States Internal Revenue Department, under the new Harrison anti-narcotic law, was another general topic discussed at this meeting. Dr. John A. Hornsby, of Chicago, noted hospital consultant and editor of THE MODERN HOSPITAL, who was the chief guest of the conference, threw an interesting light upon this subject. He had conferred personally with

DR. E. R. CREW,

PRESIDENT OHIO HOSPITAL ASSOCIATION.

Superintendent Miami Valley Hospital, Dayton.

the chief of the department and had been informed, authoritatively, that the Government does not contemplate through the administration of this act any interference with honest medical practice, and that hospitals could proceed about as they pleased in administering narcotics, providing an honest intention is indicated. This came as a considerable relief to many hospital executives as the ruling on points affecting hospitals—telephone orders, administration by nurses under directions of staff, ward records, etc.—have been rather confusing. Various plans have been adopted to meet these conditions. In Youngstown City Hospital, for instance, Superintendent Bunn reported that physicians telephone their directions in regard to narcotics to interns who are privileged to use the hospital serial number in writing the prescriptions, carrying out the doctor's orders. These are charted and initialed by the attending physician on his next visit.

At the conclusion of the session, a charter for the new Association was adopted and arrangements were made to hold the next annual meeting in Cincinnati in May, 1916.

Provision was made for three classes of members: (1) active members (dues $5.00 per year) must be trustees or executive heads of hospitals, "without reference to sex, title or denomination"; (2) associate members (fee $2.00) shall be executive officers of hospitals next in authority below the superintendent, contributors to, or officers or members of an association, the object of which is the foundation of hospitals or the promotion of interests of organized medical charity; hospital physicians, surgeons, pathologists, and superintendents of nurses; and (3) honorary

REV. A. G. LOHMANN,
FIRST VICE-PRESIDENT OHIO HOSPITAL ASSOCIATION.
Superintendent German Deaconess Hospital, Cincinnati.

membership. By hearty unanimous vote Dr. Hornsby was made the first honorary member. Dr. Matson was likewise unanimously elected, and later the courtesy was extended to the complete membership of the Ohio State Medical Board.

One of the very interesting features of the conference was the splendid address by Dr. Hornsby on "What the Association Can Accomplish." Dr. Hornsby, in opening, made very clear his idea of the chief purpose of a hospital —to take care of the sick, not to train nurses or medical men; these, he holds, are subsidiary functions.

Dr. Hornsby pointed out that the public is realizing rapidly that the hospital is the best place in which to care for the sick, because in no other place may the patient benefit by the assembled therapeutic auxiliaries—x-ray facilities, diagnostic laboratories, diet kitchens, etc.

He urged a strict enforcement of the new nurse registration law in Ohio, but pointed out the desirability of not making it prohibitive. "If the training school standards are set too high," he declared, "we will be developing nurses who are too highly educated to soil their hands." He believes that two grades of nurses are needed: (1) those who are highly educated and are fitted to teach nursing, and (2) those who can nurse the sick. He urged extreme care in working out the Ohio problem so that the nurses we graduate will not be too highly trained to be of practical value in actual nursing.

The Doctor spoke, also, upon the urgent necessity of creating plans for uniform hospital accounting and advised the association to take up this study. He declared that a system which will show the cost of each day's operation in detail is a vital necessity of the modern hospital, and one that must be met intelligently if our hospital system is to be developed. He declared that it would be necessary for the hospitals of Ohio to educate the people to reimburse the hospital for free patient service—that the expenses of this free service must not be met by adding it to the charges of the pay patient in the next room.

Dr. Hornsby participated in all of the sessions and was probably the chief factor in developing the enthusiasm for the new state organization.

It was clear from the start that the subject of nurse registration and its effect upon hospitals was the topic in which all were chiefly concerned. For a time it seemed certain that there would develop irreconcilable differences among the three classes represented—large hospitals, small hospitals and nurses. At the close of the session, however, it seemed to be the unanimous sentiment that better results for all concerned would be secured through united cooperation with the state medical board and the nurses' examining committee.

Dr. Matson, secretary of the board, was largely responsible for this. He spoke for more than two hours, explaining in detail the provisions of the new law and outlining some of the problems which the medical board is facing in providing for its administration. He explained that the law presented many intricate problems arising under the

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SECRETARY-TREASURER OHIO HOSPITAL ASSOCIATION.
Superintendent Cleveland City Hospital.

exemption features (which extend registration without examination to those who have been graduated in the past). For instance, many small hospitals which have graduated nurses have since become defunct. The board can only register graduates of satisfactory schools. Were these schools satisfactory?

The board must also decide whether training school courses given in past years by schools which have since raised their standards and are now believed to have complied with the requirements were "satisfactory" courses at the time the nurses were graduated. Dr. Matson stated

that in his opinion the board would rule that a training school which had a definite course at the time the nurse was graduated, and which followed a definite curriculum at that time, would be classed as satisfactory and that the nurses would be admitted to registration—in other words, in passing upon the training of nurses who apply for exemption certificates, the good faith and honesty of the school which graduated them will be the chief consideration.

Dr. Matson requested that the Association aid the board in establishing minimum standards for the future. It has already been decided that schools to be approved by the board, from now on must have a definite curriculum that the board will be able to check; that they must give the matriculant the education promised and that they must ascertain in advance that the matriculant is educationally qualified to take up the study of nursing.

Dr. Hoy, of Wellston, member of the last general assembly, who was active in securing the enactment of the nurse registration law, declared that particular care had been exercised to give the small hospitals a square deal. He urged the association to cooperate with the state medical board to this end.

Dr. Crew, of Dayton, was unanimously elected president and Mr. Howell Wright, superintendent of Cleveland City Hospital, was elected secretary-treasurer; Rev. A. G. Lohmann, Cincinnati; Miss Charlotte Kerans, Toledo, and Miss E. J. Lauten, Ashtabula, were elected vice-presidents; and the following executive committee was chosen: Dr. W. S. Hoy, Wellston; Dr. A. C. Bachmeyer, Cincinnati; Miss Mabel Morrison, Toledo; Dr. F. C. Huth, Cambridge; Miss M. C. Echols, Massillon.

The following is a list of those registered at the conference:

*Cleveland:* Howell Wright, superintendent City Hospital; C. B. Hildreth, superintendent St. Luke's Hospital; Dr. J. E. Allport, Glenville Hospital (also People's Hospital, Akron, and Citizens' Hospital, Barberton); Anne Williamson, R. N., superintendent Glenville Hospital; Anna Pepper, City Hospital; Alma C. Hogle, superintendent Huron Road Hospital; Sister M. Dolores, head nurse St. Vincent Charity Hospital; Sister M. Marcelline, superintendent of nurses St. Vincent Charity Hospital; Elise Mannel, superintendent Lutheran Hospital; Norma Stein, head nurse; Dr. Paul H. Krebs, staff; Dr. E. Klaus, staff, of Lutheran Hospital.

*Columbus:* Robert G. Paterson, state board of health; Dr. Geo. H. Matson, State Medical Board; Dr. F. F. Lawrence, Lawrence Hospital; Mrs. F. F. Lawrence, Mary A. Jamison, superintendent Grant Hospital; Anna Johnson, Jennie C. Quinby, superintendent St. Clair Hospital; G. V. Sheridan, Ohio State Medical Journal.

*Cincinnati:* Albert G. Lohmann, superintendent German Deaconess Hospital.

*Dayton:* Dr. E. R. Crew, superintendent Miami Valley Hospital; Mrs. E. R. Crew, P. B. Scully, Miami Valley Hospital; G. L. P. Friend, superintendent of nurses Miami Valley Hospital; Dr. B. W. Beatty, surgeon St. Elizabeth Hospital.

*Toledo:* Dr. C. S. Ordway, chief surgeon and president of board of trustees, East Side Hospital; Charlotte Kerans, Flower Hospital.

*Ashtabula:* E. Jane Lauten, superintendent General Hospital; Anna Gessler, graduate nurse.

*Akron:* Rose K. Steinmetz, Children's Hospital; Louise C. Brand, Children's Hospital.

*Cambridge:* Dr. F. C. Huth, surgeon, Cambridge Hospital. *Conneaut:* Kate M. Moyer, superintendent; Jessie J. Hubbard, assistant superintendent, Grace Hospital. *Elyria:* Anna Younglove, superintendent Elyria Memorial Hospital; R. Alice Cowen, graduate nurse. *Findlay:* Roma Lambert, superintendent Findlay Hospital. *Kenton:* Sister Maria Joseph, Sister Rose Francis, Antonio Hospital. *Lima:* Margaret B. Mateer, superintendent; Lura J. Allen, Lima Hospital. *Logan:* Dr. J. S. Cherrington, Mrs. J. S. Cherrington, Cherrington Hospital; E. Gilbert. *Marietta:* Dr. S. A. Cunningham, superintendent Marietta Hospital. *Piqua:* D. H. Shaw, superintendent Memorial Hospital. *Port Clinton:* Dr. H. J. Pool, surgeon; Mrs. H. J. Pool; Lucy A. Nims, head nurse, Pool Hospital. *Ravenna:* Dr. W. W. White, superintendent White Hospital. *Salem:* Nelle I. Templeton, superintendent; Pauline M. Tweeddale, assistant superintendent, City Hospital. *Sandusky:* Miss R. H. Soutar, Good Samaritan Hospital; Sister M. Aurelia, superintendent of nurses; Sister M. Rosemary, head nurse, Providence Hospital. *Springfield:* L. J. Napier, superintendent City Hospital. *Warren:* Mary E. Surbray, superintendent City Hospital. *Youngstown:* Fred A. Bunn, superintendent Youngstown Hospital. *Wellston:* Dr. W. S. Hoy, Hoy Hospital.

The officers of the Association, immediately upon adjournment, issued the following call for members:

"The membership list of the Ohio Hospital Association for both active and associate membership is now open. Applications should be filed with Mr. Howell Wright, Superintendent City Hospital, Cleveland. Plans are now being worked to keep the members of this Association, through some form of bulletin service, in close touch with the State Medical Board during the development of the plans for nurse registration and with the Medical Department of the Ohio Industrial Commission. All connected with hospitals qualified for membership should make immediate application."

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## The Building of the Hospital: Construction[1]

BY OLIVER H. BARTINE,
Superintendent of the New York Society for the Relief of the Ruptured and Crippled.

Within the past decade vast strides have been made in the practice of medicine and surgery, but it is the feeling of the writer that even greater progress has been made in the field of hospital construction and equipment, so that today the facilities providing for the care and treatment of the sick and afflicted are such as were not considered possible a few years ago.

In complying with the request of our beloved late President of this Association, Dr. William O. Mann, to prepare a paper on hospital construction, it has seemed best to me to give special consideration to those phases of the work which are more frequently overlooked by the building committee and to refrain from an attempt to cover the general construction details which have been ably presented by others at our previous conventions. It is obvious that to cover fully the field of hospital building construction would involve the writing of several volumes, so that the writer trusts that you will bear with him while he deals briefly with matters fundamentally important.

The architect, the consulting engineer and the builder are specialists in the different phases of construction. If they are students of the methods and developments in the hospital field, so much the better. Indeed, it is most desirable that they should be students, but more important that they should have had extensive experience in this work, but it is absolutely necessary that they should place much reliance upon the instruction and advice of those occupying and operating the new hospital and upon the building committee. Without the cooperation of those versed in the methods and purposes of the hospital and those experienced in the direction and management thereof, it can but be expected that the new building will be an architectural and engineering monument rather than a serviceable hospital. Therefore, it is most essential that the hospital authorities give freely of their time to the study and consideration of the various problems involved, and have frequent conferences with the architects, engineers and builders. And this is true regardless of the extent of the experience which the architect, engineer and builder may have had in general hospital construction, for every hospital has its individual needs, peculiarities and problems.

[1]Paper read before the Seventeenth Annual Conference of the American Hospital Association, San Francisco, June 22-25, 1915.

The work of many hospitals has suffered seriously through the lack of proper consideration by the members of the staff and building committee, who have placed too much reliance and responsibility upon the architect and the engineers, and upon individuals who have exercised too great an influence over the committee. This is not intended to imply that the staff and building committee should understand or dictate the materials or methods of construction, in so far as they do not affect the work and cost of the hospital building, but the remark relates more especially to the general arrangement and the equipment required to meet peculiar needs of the particular hospital. Some of the defects and the remedies proposed therefor are referred to in a paper by the writer on "The Building of the Hospital; Its Organization and Methods," read before the Hospital Alliance at the Academy of Medicine in New York on December first, last, and I will therefore not dwell on this phase of the work at this time.

### THE FIELD OF THE HOSPITAL

Hospitals, like churches, should give a greater degree of consideration to their relations to the needs of the community. These, rather than personal reasons or desires, should serve as a guide in determining whether a particular hospital should be built in a particular locality. The creation of a hospital for special or personal reasons, regardless of needs, should be avoided. A plan should be devised whereby representatives of existing institutions and other interested bodies could pass experienced judgment upon a proposal for a new hospital before the establishment of such institutions by private bodies. It may be that this should not apply to strictly private hospitals where the public will not eventually be called upon for its support. The state boards of charities, whose function it is in many states to pass judgment upon such applications, should, and in many cases are, giving this matter their very serious consideration. Some local governing body should be in control of this matter in each state or section of the country.

### SITE

As in the case of the establishment of the hospital, the needs of the locality, and not personal inclination or preference, should guide in determining the location of a new hospital. The population, its character, and its needs should be carefully studied in connection with any site considered. The accessibility of the proposed site should also be carefully investigated; and its freedom from nuisance is most important.

The particular section of the country or city in which the hospital is built may have a direct bearing upon the nature of the service to be rendered by the hospital, particularly if the community is largely populated by the poor. Accessibility is also most desirable from the standpoint of the trustees, attending and visiting physicians, the surgical staff, and visitors to the hospital.

The elevation of the site, existing surroundings and the probable future of the neighborhood should also be the subjects of careful study. The site may also have a direct bearing upon the type of building proposed. Detailed consideration must be given to the problems of drainage, including the natural drainage of the subsoil, so that excessive expenditure for waterproofing of foundation and basement walls, or the continuous use of the drainage pump will not be involved. Similarly the possibility of sewer, water, electric, gas and telephone connections must be considered. A number of cases might be cited where these important matters have been overlooked, particularly the matter of drainage and water supply, with a resulting large expenditure of money which should have gone into the construction of the building and its equipment. Mature judgment in the selection of the site will result in a large saving of money which may otherwise have to be spent for water supply and other service connections.

Another most important consideration in the selection of the site should be the character of the ground as related to the matter of basement and foundations. To a large extent this is an unknown factor in any case, but a large amount of data relative thereto can be had by an investigation of the surface appearance of the site, with a further investigation of the conditions found upon excavation for other buildings in the immediate vicinity. The best information in this direction may be secured by making test holes or borings at various points on the proposed site of the hospital. Without such investigations the hospital board may find itself in possession of a piece of property which will involve rock excavation, piling, or even caisson work, costing a large sum of money which could be better used in the construction of the building proper. In the case of a hospital building recently constructed $100,000 was spent for rock excavation in excess of the cost of the same amount of earth excavation, this sum representing 9 percent of the total cost of the building.

Where there are existing buildings on the lot lines, the foundation walls of which do not go down so deep as will those required for the proposed hospital, expensive shoring of adjoining buildings may be required, this being in some cases so extensive as to become a serious item of cost. This should be given its due consideration in the selection of the site and in estimating the cost of the proposed building. The New York City building code specifies that the excavation for a new building may be carried fifteen feet below the curb line without involving the owners of the new building in expense due to damages to adjoining property, beyond which depth the owner of the new building must assume the expense of shoring and damages to adjoining property. Other cities have similar building code regulations.

A most serious mistake is sometimes made by the selection of a site which limits or determines the size and character of the building or the number of buildings of the new hospital. A small plot may so affect the arrangement of the buildings, or the units thereof, as to affect seriously the usefulness of the hospital. An irregularly shaped plot may have exactly the same effect. The building, or the arrangement thereof, should not be dependent on the site, but the site should be selected to suit the arrangement, character, size and number of buildings required. Any site which involves a limitation of the number, size or character of the buildings, or an illogical relation of the buildings, or the units or departments thereof, should be avoided. In determining upon the site the most careful and liberal provisions should be made for the future growth of the institution.

In a city, or portions thereof, where land is held at almost prohibitive prices the most careful consideration must be given to the cost of the site, and this matter should be determined in such a way that the expenditure thereof shall not rob the building fund to an extent which makes impossible the construction of a suitable building.

In an effort to secure the best site at the most reasonable terms one hospital secured prices on fifty sites without it becoming known that the property was desired for the construction of a hospital building. In this way the trustees obtained the best possible information as to the relative values of property, which, taken into consideration with the needs of the different communities and the

other considerations affecting the availability of the various sites, enabled them to purchase a site answering every purpose, on which there were twenty houses held by nearly twenty different individuals, at a cost below the market price for realty in that particular section of the community. In a similar way some such plan could be carried out in nearly every instance.

### GENERAL ARRANGEMENTS

The general arrangement of the new hospital most vitally affects its future success. This should not be limited in any way by extravagance in plan or exterior. Neither the architect nor the committee should regard the new hospital building as a monument to themselves, to be arranged elaborately or ornamented at the expense of the convenience or utility of the building or its service to patients.

The exterior of the building may be constructed of common brick, of face brick, or of various stones, with a very material effect on the cost of the structure and without any effect on the efficiency of the hospital in carrying on its work. Therefore, it is felt that the plan of the hospital should be the first consideration and the ornamentation of the exterior a lesser consideration.

With reasonable skill and study a very satisfactory exterior may be obtained with the use of common brick and a small amount of terra-cotta or stone ornamentation. If sufficient funds are available to permit of the use of pressed brick and a greater amount of stone ornamentation without affecting the plan and scope of the hospital, this is desirable, but an ornate stone building or stone trimmed building should be built only where ample funds are available. Too great emphasis cannot be placed on the fact that the convenience of the patients and the service rendered to them should be the first consideration.

The location of the department occupied by resident patients may be more remote, and thus less to be considered than the departments serving the out-patients or constituting the dispensary.

It is unfortunate that we find in some of the newer hospitals the out-patients' and emergency departments so remote from the entrance as to be most inconvenient for the patients served by these departments. In some cases the first floor is so occupied by other departments that it becomes necessary for the visiting patients to walk upstairs or use the elevators. In other cases we find it necessary for the greatest number of patients, which are those using the out-patients' and emergency departments, to walk from a block to a block and a half around the building before reaching their entrance. Outside entrances directly to these departments are desirable wherever possible. In any case the patients should be given the first consideration in such matters.

The general practice of locating the operating suite at a remote section of the building, where the required isolation may be had, is to be commended, but nevertheless this should be so located as to be accessible to elevators or passageways connecting with all departments of the hospital which are served thereby.

The ambulance station and power plant should, wherever possible, be located as remotely as may be from the portions of the hospital buildings occupied by patients or employees. In many cases these departments may be advantageously accommodated in one separate building, together with the laundry.

Too frequently in the planning and construction of a new institution, especially where the institution consists of a number of buildings, the power plant and power house are given the last consideration. This should be one of the first things provided for, so that the power house may be erected and the plant installed in ample time to supply all the necessary heat, light and power incidental to the erection of the other buildings. Such a method of procedure will often materially reduce the cost of the construction of the building.

While it is manifestly desirable that the power plant, with its boilers, engines and refrigerating plant, should be remote from the main building, it is possible, in the case of small hospitals, or in the case of larger hospitals on sites of limited area, to place the power plant directly in the basement of the building and still provide for such quiet operation and isolation of the noise as to cause no annoyance. This may be accomplished by insulating the foundations of all moving machinery so that the noise and vibration incidental to the operation of the machinery cannot be communicated to the building, and by the use of sound and heat insulating ceilings which prevent the noise and heat incidental to the operation of the plant from being communicated to the rooms above.

The source of coal supply and ash removal should also be carefully considered and be located as remotely as possible from occupied apartments.

A careful study must be made of each and every department in order that each and every detail essential thereto shall be provided in a convenient manner and so that all departments may be properly correlated. In this study each department head and especially the chief physician and chief surgeon, should consult with the superintendent of the hospital (who should be a member of the advisory committee to the building committee) in order that no need may be overlooked and that the location of all departments may be properly related. Upon the superintendent principally, supplemented by the efforts of the building committee, will fall the duty of seeing that departments are properly correlated and that over-elaboration and extravagance are avoided. Contrary to a frequently expressed opinion, upon the superintendent must the greatest dependence be placed to exercise proper judgment in this respect. A well versed hospital specialist also would be of great assistance in guiding the building committee, the architect and the engineer through the shoals of insufficient or excess equipment.

In a like manner must the most careful consideration be given to the making of proper provision for future extensions of the hospital building. This must be provided for in the most flexible manner possible, as it is very difficult to foretell in what directions any hospital may grow most rapidly. Particularly in the design of the heating and ventilating and power plant are the services of a consulting engineer of extensive experience in designing hospital equipment desirable. Such experience is the best guide in so designing the plant as to provide for extensions and additions in every possible direction at the least expense.

### FOUNDATIONS

The importance of the hospital foundation cannot be over-estimated. The greatest amount of skill and experience is essential to the determination of the character of the foundations. These bear a very direct relation to the nature of the ground upon which the foundations rest. As has already been stated, ground requiring piling or construction of foundations by means of caissons should be avoided in every instance because of the expense involved in such work. Where an excessive amount of rock excavation is involved, or quicksand or other unstable material is encountered, a very large amount may be spent upon the foundation construction to the injury of the rest of the building.

The construction of the foundations should be under the direct supervision of a "clerk of the works," or resident superintendent, who should inspect each foot of the ground upon which the foundations are to rest, and the placing of all materials used in the foundations. More cracks, and settling of buildings, are due to defective foundations than to any other cause. The superintendent of construction should be a man of experience and ability to maintain strict discipline, for he is charged with the gravest responsibilities in connection with the foundation problem. The various contractors will often endeavor to influence him in accepting materials that are not in strict compliance with the specifications. He should be very skeptical of any change in material that is advised, for in most cases it is likely to be of inferior quality and of advantage to the contractor only. He should be very observant and attentive to his duties, for a small amount of defective work is enough to weaken the whole structure or building. This will also apply to the foundations for all machinery in the building.

The clerk of the works should remain upon the work until the building is completed in the case of any building costing $50,000 or more. The careful supervision of the building construction will save a great deal in the later cost of maintaining the building and will result in the satisfaction of every one in a properly constructed building. If the man so employed be thoroughly acquainted with the installation of the mechanical equipment, so much the better, but such a combination in one man is rarely obtainable.

### WALLS

Reference has previously been made to extravagance in the construction of the building. The exterior appearance of a building does not add to its utility, and therefore great care should be exercised in regard to the style of architecture employed and the class of materials used. The usefulness of the building is chiefly dependent upon the plan and equipment of the interior. Economy and efficiency should, therefore, be the watchword in the construction of the building.

Whether brick or stone, or a combination of the two, shall be used on the exterior of the building must be determined upon the basis to which reference has previously been made.

Whether the walls shall be of self-supporting construction or of steel construction will depend largely upon the size and height of the hospital. Ordinarily any hospital over two stories in height may best be constructed with steel structure. Reinforced concrete for wall construction may only be used to advantage in large buildings.

All walls below grade should be carefully waterproofed, either by the use of hydrolithic cement or by the more generally used process of waterproofing felts and pitch. Above grade the exterior walls should be damp-proofed to prevent dampness within the building.

Interior walls should in every case be fireproof and soundproof. By the use of terra-cotta blocks or pyro-blocks, or similar plaster blocks, both purposes may be accomplished, inasmuch as they are made of fireproof materials and their construction is such that they provide one or more air spaces in the thickness of the wall.

Only the best of materials should be used for plastering in order to procure a hard, smooth surface and a wall surface which will be free from cracks and disintegration.

### FLOORS

The subject of flooring in a hospital is a much debated one. The fact of the matter is that careful consideration should be separately given to the character of flooring to be used in each department of the hospital, and suitable flooring, therefore, should be determined upon.

Certain fundamental considerations underlie the general question of flooring, and the most important detail thereof is the foundation for the flooring. Care should be exercised to see that a thoroughly substantial foundation is provided. This is especially important where composition floors are used, in connection with which it is especially important that pipes should not be concealed in the flooring where such floors are used, for the space left for such pipes constitutes a break in the foundation or flooring material which is sure to result in serious cracks. To a considerable extent this is also true where tile or concrete floors are used. Where wood floors are used pipes may be run in the floor construction if there is placed on the top of the concrete floor slab a floor fill of cinder concrete not less than 4 inches, and preferably 5 inches, in depth. It is extremely difficult to place steam pipes properly concealed in the floor construction with less than a 5-inch floor fill, for in addition to the pipes there must be provided space for insulation and for the pitch of the pipes. In many cases it is deemed necessary to place such pipes concealed in the floor construction, but this is not desirable if it can be avoided, and where it becomes necessary it is to be recommended that trenches be provided for the pipes with removable trench covers or floor pockets.

Another most important consideration in connection with floor construction is the soundproof quality thereof. In most modern hospital construction the floor slabs are of reinforced concrete. If a wood or tile floor is used, provision for soundproofing must be made by the placing of a cinder concrete fill on the concrete floor slab under the wood flooring. If composition floors are used little trouble will be experienced from the noise.

Probably the most satisfactory floor for the operating room is a hexagonal non-absorbent gray tile, which, when carefully laid on a proper foundation, with closed cemented joints, will give thoroughly satisfactory service. The gray tile is less tiring to the eyes than is the white tile and less difficult to keep clean. The tile should be thoroughly vitrified and should have an impervious surface.

For the wards also this gray tile makes a very serviceable floor and gives a very pleasant appearance, while it has the merit of being most durable.

Linoleum also has many advantages in wards and private rooms and also in private room corridors, but it is subject to the objection that it is easily marred and cannot withstand rough usage as well as the tile. Also it is absorbent, especially when the surface is worn off. If linoleum is used extreme care must be exercised in the selection of material and in the method of laying it. In connection with linoleum a light tile border is sometimes used with very satisfactory results. To avoid crevices between the tile and linoleum a metal strip may be used to fit into the grooves between the two materials, this being made with narrow flanges spreading over the edges of the linoleum and tile.

Despite objections urged against wood flooring it still finds most favor in private rooms. It gives a much more homelike appearance with resulting satisfaction to the patients. If the wood flooring used is thoroughly seasoned and dried, and if the committee and architect cause proper supervision to be exercised in its selection and laying, there is no reason why the objection commonly raised to the wood flooring, that it shrinks and results in annoying cracks, should exist. (Objections are justly offered to the appearance of linoleum, tile, or terrazzo in private rooms.)

In pantries, corridors, dressing rooms, toilets and other

service rooms and spaces, tile and terrazzo floors are found to be the most satisfactory and durable. In some cases, however, the composition flooring has been used in these spaces with satisfaction, but the greatest of care must be used in providing proper foundations therefor and in selecting and laying the material.

For the out-patients' department preference should be given to a light colored flooring. Tiling is found to be more expensive than terrazzo and preference is, therefore, in many cases given to the latter. The Heatherbloom tile makes a very attractive appearance in an out-patients' department waiting room.

In the laundry and kitchen the tile or terra-cotta floors would be most satisfactory except for the objection of the employees that these hard floors are severe on their feet. For this reason the composition floors are found very satisfactory in kitchens, and, except in the wash room, in the laundry. Asphalt flooring has also been found satisfactory in kitchens and laundries, but care should be used not to lay the asphalt flooring near the ranges in the kitchen. A small area of vitrified brick flooring or cement should be placed about the range. In the wash room of the laundry a cement or asphalt floor will be found most satisfactory, the latter being the easier on the feet of the employees.

In the basement the cement flooring is no doubt the best. The same may also be said of the floors of the sleeping rooms and dining rooms for staff and employees with adjacent corridors. This is especially true if the floors are painted with a hard surface varnish paint. Or they may be covered with linoleum.

From the standpoint of daily cleaning and maintenance the terrazzo flooring is unquestionably the most economical and satisfactory flooring of the present day.

The approximate relative cost of various flooring materials, as stated by Mr. H. M. Hooker, are as follows, the material of the highest cost being first stated:

Marble.
Cork tile.
Rubber tile.
Tile, clay, ceramic, encaustic.
Mosiac tile.
Slate.
Terrazzo.
Composition flooring.
Wood, hard maple.
Asphalt.
Linoleum.
Portland cement, mortar finish.

### TRIM

Wood trim is still largely used in hospital buildings. All wood, wherever used in the building, should be properly and thoroughly dried and seasoned, and the most careful inspection should be given to it. Flat upper surfaces, mouldings and projections should be most carefully avoided. The design of the trim throughout should be such as to eliminate dust-lodging places. It is most unfortunate to find in many of our modern hospitals, at least in some of the departments, numerous dust-catching mouldings, cabinet tops and shelves. The cleanliness of the building depends largely upon the design of the interior finish, and therefore the greatest care should be exercised from the beginning as to the details of the doors, windows, closets, radiators, pipes, etc. When one enters a hospital building the first impression has much to do with the general impression of the hospital, particularly with the critical physician, and also with the hospital authorities and the casual visitor.

To a very large extent the use of the wood trim is being supplanted by the use of metal doors, window frames, window sash and general trim. While this represents a material increase in the expense attached, this matter should be given the most serious consideration by the building committee. It is particularly to be recommended that the corners in the main thoroughfares be reinforced with metal.

Many opportunities are overlooked for the provision of cabinets or closets in the walls of the rooms where they are most desirable, particularly in the matter of receptacles for bed pans, urinals, etc. Closets for these utensils should be thoroughly ventilated.

Hangings should be omitted as far as possible, but may be required to a slight extent in the private rooms, sun rooms, general recreation rooms and in the apartments of the superintendent, staff and employees, to give a homelike appearance.

### AREAS

In connection with many buildings the basement may be made serviceable by the use of the areaways. To provide properly for the ventilation and light of the rooms which they serve they should be of ample area, and the walls thereof should be lined with a white or light glazed brick, or with a light cement finish. They should, in every case, be thoroughly drained, and they should be readily accessible from the outside or by means of ample windows from the inside. Where gratings must be placed over these areas they should be substantial and yet open in design, and they should be removable.

### FIRE EXITS

Of the necessity for proper fire exits little need be said, for these must meet the requirements of all city building codes, and this is thoroughly understood by the architect and builder. Outside fire escapes are in many cases desirable, but interior enclosed fire stairways are largely used.

### COLOR SCHEME

Decision upon the color scheme throughout the building should not be hastily made, for the color scheme has much to do with the agreeable appearance of the hospital, and also has a direct bearing on the labor involved in the care of the interior. Colors should not be selected from the sample color sheets containing a number of colors, but by means of an actual application of the proposed color upon the walls of the rooms. By this means the members of the building committee may obtain a proper idea of the effect of the color proposed, and be enabled to make intelligent selections. The effect of surroundings and light upon various colors is such as to vary the effect of certain colors very materially.

In many hospitals one feels the lack of warmth or comfort due to an unfortunate choice of colors. Possibly the best way to obtain proper information regarding the selection of colors is by means of visits to existing hospitals where satisfactory color schemes are in use. The wall color must necessarily vary with the different departments or units of the hospital, and it should be considered with a view to obtaining the best colors for each particular unit. Care also should be exercised to procure those materials for wall finish which will give the most sanitary and lasting service, and which can be readily cleaned.

### HEATING AND VENTILATING

The degree of efficiency with which the building serves its purpose and is made comfortable and convenient depends most largely upon the character and completeness of its mechanical equipment. Quite as important also is the fact that the heaviest of the operating expenses of the

hospital are those connected with the heating and power plant, and the extraordinary repairs and replacements necessary there.

Regardless of the differing views as to the status of artificial ventilation as applied to the hospital, there can be no disputing the fact that the heating plant of the hospital is a most important department. Provision must be made for the heating of the entire building and for a source of steam for laundry, kitchen and sterilizing work. Further, there should be thorough means of ventilating all toilets, kitchens (including diet kitchens), laundry and many other service rooms. Very few there are who do not believe in the importance of a complete artificial ventilating plant for the operating room. It is believed that the consensus of the best opinion also requires that there should be provided exhaust ventilation for all large wards, and in case of hospitals built in congested districts in the cities a supply of fresh air by means of an artificial ventilating system is also desirable.

A great deal is said of the success of natural ventilation, but it may be questioned whether the exponents of such a method of ventilation give proper consideration to the nuisance caused by open windows because of dust and noise, and to the effect of the dry air resulting from natural ventilation, as well as to the difficulty of controlling this method of ventilation.

These are subjects upon which there should be a very definite understanding, and upon which dependence should be placed upon a consulting engineer having extended experience in the design of such equipments for modern hospital buildings. By the employment of such a consulting engineer the building may be sure to have incorporated therein the most modern and improved methods of ventilation with freedom from an over supply of apparatus.

A vast amount of experimentation is at present in progress relating to the problems of ventilation, and it is to be hoped that definite standards will soon be agreed upon which will meet with the approval of the medical and engineering professions, as well as the approval of those who are responsible for the payment of the operating expenses. Possibly the most interesting and encouraging investigation of the problems of ventilation is that now being conducted by the New York State Commission on Ventilation, of which Professor C. E. A. Winslow is chairman; the other members of the Commission being Mr. D. D. Kimball, President of the American Society of Heating and Ventilating Engineers; Professor F. S. Lee, of the College of Physicians and Surgeons; Professor Edward Lee Thorndike, of the Teachers' College, Columbia University; Dr. James Alexander Miller, of Bellevue and Allied Hospitals, and Prof. Earle B. Phelps, of the Hygiene Laboratory, Department of Agriculture, Washington. This Commission has available for its investigation a fund of $75,000, and has an experimental laboratory at the College of the City of New York and an experimental school plant at Public School No. 51, the Bronx, New York City.

Serious objections may be offered to any detail of the heating and ventilating equipment which is so arranged as to prevent thorough cleaning of all parts. To this end the hospital type of radiators should be used, these being constructed with an enlarged space between the radiator sections, and the radiators should be suspended from the walls with a space of not less than three inches, and preferably four inches, at the back of the radiators, and not less than five inches between the bottom of the radiators and the floor.

The ventilating grills should be so installed that they may be readily removed or be readily opened to permit of cleaning of the backs of the grills and the connecting ducts.

So far as possible the pipes of the heating and plumbing systems should not be concealed. If they are not easily accessible, a repair, which in itself may be very slight, may involve a serious expenditure for the cutting of walls, floors or ceilings.

Where vertical pipes must be concealed in the walls it is desirable that ample doors should be placed over the chases so as to permit of access to the pipes. In a similar way pipes concealed in the ceiling may be made accessible by the use of doors adjacent to the position of the pipes, and preferably all such doors and their frames should be of metal. Pipes concealed in floors should be made accessible by placing them in trenches with removable sections of the floor, floor or trench plates over the pipes.

The cost of the heating and ventilating installation is a considerable item in the total cost of the building. Too often this cost is reduced by the use of insufficient apparatus, and more often still by the use of cheap materials which involve a high maintenance cost. Also the design of the installation is often accompanied by an entire lack of understanding of the particular needs of the hospital, and without the selection of the best apparatus for the purpose. The installation should be made with a view to the least possible cost of maintenance.

To some extent every hospital needs a ventilating apparatus, and some hospitals need a thorough artificial ventilating system. But it must be understood that the operation of the ventilating system costs money. Operating expenses may be reduced by a failure to operate the ventilating system, but in such case not only is the comfort of the hospital affected, but its efficiency is lessened, and the original cost of installation is wasted.

The operating and maintenance cost of the heating and ventilating plant is possibly the largest single item of cost in the operation of the hospital. For this reason the maximum of skill should be exercised in the design and installation of the plant. The purpose and needs of the hospital are so varied that the design of the heating and ventilating plant therefor is most complicated, and only the maximum of experience and skill will bring about the most satisfaction and the least maintenance and operating cost.

Because of the fact that the ultimate results are largely dependent upon the work of the operating engineer of the hospital, and because many of these men have had a large amount of experience in operating and maintaining hospital plants, it will be found of inestimable value to all concerned if the operating engineer be brought into intimate contact with those making the plans for the hospital and its equipment. Multitudinous problems will arise concerning which no one will have the same intimate knowledge and experience as will the operating engineer. Many of these men are most capable and conscientious and their experience will be found most helpful. This is particularly true in the case of determining upon the exact nature of the apparatus and equipment to be installed. It is not to be expected, however, that these men will be capable of designing the equipment of a new hospital building, large or small, for they are naturally not versed in the theory of the work, and there are many problems of design and installation with which they have had no experience. The designing consulting engineer must combine theory, experience and practice, and these the operating engineer may supplement with his practical experience with certain apparatus and with the special problems involved.

### PLUMBING

The type of fixtures to be used in connection with the plumbing systems are as varied as are the different pur-

poses of hospitals and the different departments thereof. As a rule too little consideration is given to the exact needs of a hospital, and standard plumbing fixtures are often used instead of special fixtures available for hospital purposes. The fittings applied to the plumbing fixtures should be simple in design but heavy and substantial, and they should be especially designed for the purpose served.

Duplication of plumbing lines so frequently occurring in hospitals should be avoided wherever possible, and the plumbing piping system should be simplified to the last degree.

Where plumbing pipes must be placed under the floor they should be laid in trenches with removable covers, as in the case of steam pipes. The suggestions made relative to doors giving access to chases in the wall, or furred spaces in the ceiling wherein pipes are concealed, apply to the plumbing piping system as well as to the heating system.

In the case of one large hospital the toilets and service rooms on the various floors were arranged directly over each other, so that the entire system of plumbing piping was exposed in these rooms and thus was accessible at all times. The pipes are covered with painted asbestos coverings in such a way as to make it quite as easy to keep them clean as to keep the walls clean; and certainly the tremendous advantage in having the pipes thus accessible in case of necessity of repairs quite overbalances any objections to the exposed pipes.

Cleanout plugs in the soil and drain pipes are customarily required by plumbing codes, but in the absence of such requirements extreme care should be used to see that brass screw-cap cleanouts are provided throughout the system. This is especially important in connection with waste lines from the pantries, carrying grease, and also in lines connecting to the operating rooms, dressing rooms and other rooms where special conditions demand.

Care should be exercised in the roughing in of the plumbing system to see that all piping in the waste and drainage lines is reamed internally so that the lines shall be free from burrs and other obstructions. Such care will save much later annoyance and expense.

Very frequently fire hose is found suspended on hose racks exposed on the corridor walls in hospitals. A much better method is to provide a cabinet with a glass door containing the fire hose, the face of the cabinet being flush with the wall of the corridor.

### ILLUMINATION

The development of the art of illumination is progressing rapidly. The subject of hospital illumination is just beginning to receive the attention which it merits. The most careful attention to this phase of hospital construction is demanded on the part of the hospital authorities, the architect and the consulting engineer. Special problems relating to the efficiency and comfort of the illumination are involved, and in working out the best results in these directions the economical operation of the illuminating system may not be overlooked. It is not uncommon to find a new hospital building planned and built without any conferences on the subject of illumination between the architect, engineer and hospital authorities, the idea being in this instance, as in some others, that the architect and engineer are engaged as experts and should know just what will best meet the conditions. Such a plan ignores the fact that the building may have, and usually does have, peculiar problems on which the hospital authorities and staff alone are best informed, and this plan further disregards entirely the vast amount of valuable experience and information which the superintendent, doctors and operating engineer may have accumulated in the conduct of this particular hospital or other hospital buildings.

With the advance of the art of illumination new electric lamps of increased efficiency will be available, new designs of fixtures will be made to meet existing conditions and new ideas, all of which will modify the opinions of those connected with this work.

A general rule should be laid down that the lighting fixtures should be simple in design but neat in appearance, as free as possible from ornamentation, heavy and durable, easily cleaned and not expensive to repair or replace. The reflector now in use on the indirect and semi-indirect fixture is a troublesome dirt collector which is not easily cleaned, and expensive to renew in case of breakage. The problem of obtaining a fixture free from these objections needs careful study, for the indirect and semi-indirect methods of illumination have many advantages which warrant their retention.

Possibly the operating room offers the greatest difficulty in the matter of illumination. That there should be no permanent ceiling fixture in the operating room seems certain. Despite extreme care it will be found to be a dirt collector and distributor, and it seriously concentrates heat over the operating table. I have been conducting some experiments in this matter of operating room lighting with most interesting results.

The most satisfactory result has been obtained by building in at the junction of wall and ceiling entirely around the room a trough containing a large number of electric lights of small wattage, the sizes of which depend upon the size of the room, with other lights placed in a box built into the ceiling directly over the operating table, and still other similar lights built into the wall at each side of the operating room at a height approximately that of the operating table, these latter being used only when required. Supplementing this arrangement there should be one or two plug outlets to which portable lights may be connected for special illumination when and where desired.

The lighting trough referred to is fitted with suitably shaped polished or mirrored reflectors with cover plates set flush with the surface of the wall and ceiling. The cover plate or frame is hinged and contains a glass screen, there being ventilated openings in the frame. The exposed surface is finished in white enamel or may be nickel plated. The setting of this fixture is so arranged as to throw the light principally on the operating table, but the reflected light from the ceiling and walls results in a most uniform degree of illumination. The extent of this illumination is such as to obviate entirely shadows at the operating table because the rays of light come from a multitude of directions. The switch control may be so arranged as to turn on all the lights or alternate lights in the trough, as desired.

There are many advocates of the use of dark colors on the walls of the operating room. The author feels that this is a mistake, inasmuch as dirt may not be easily detected and the darker colors interfere with proper reflection and diffusion of the light from the walls. While a relief from the glazed white walls may be desirable, it is believed that this may be accomplished without recourse to the very dark walls.

Recent tests made by illuminating engineers show that light is absorbed by walls of different colors as follows:

| | | | |
|---|---|---|---|
| White | 18% | Emerald green | 82% |
| Chrome yellow | 38% | Dark brown | 87% |
| Orange | 50% | Vermilion | 88% |
| Plain deal | 55% | Blue green | 88% |
| Yellow | 60% | Cobalt blue | 88% |
| Pink | 64% | Deep chocolate | 96% |

This refers, of course, to the reflecting effect of these colors, that is, the effect of the lighting on the room is not exactly in proportion to the above figures. It will, however, be noted that only the first two colors (white and chrome yellow) reflect more than half of the light received. The effect of dark walls in the operating room is therefore evident, and if these are to be used the volume of light must be materially increased to provide the same degree of illumination at the operating table. It is believed that the discomfort to the operator may be overcome without recourse to undesirable dark colors. The omission of the glazed surface on the wall, substituting a flat light finish, will go far towards accomplishing this desired result.

The general use of the three and four-way switch is to be recommended, by means of which the first push on the button will turn on one light, which may be of small wattage for night use, the second push turns on the remaining lights, the third push puts out all except the first light, and the fourth push turns off the small light.

The electric equipment of the modern hospital has become most complicated, but no detail of the hospital is more important than its electric equipment. The wiring system is almost universally the three-wire 110-220-volt system, the lights being operated at 110 volts and the motors being connected to the 220-volt service.

Special outlets should be provided in all wards, private rooms and treatment rooms for special devices for heating, and in the kitchens, especially in the diet kitchens, similar outlets should be provided for cooking and other work. Similar outlets for laboratory purposes should be provided in all laboratories. These special outlets may well be located about three feet from the floor.

It is most desirable that the lighting, power and special service outlets should be connected to separate wiring systems back to the main switchboard in the basement.

The telephone equipment is a puzzling problem. To maintain public service telephones in all departments is expensive. The best arrangement for a large hospital is doubtless the maintenance of the public service telephones in the general offices and the principal departmental offices, with an interior private telephone system where additional telephone service is important for the administration of the hospital.

In private room pavilions a telephone plug outlet may be desirable in the private rooms to which telephones may be connected when a patient's desire and condition make this permissible. For the service of the doctors who spend much of their time about the building, a device largely used in mercantile establishments may be desirable. This consists of a horizontal rectangular box containing signal lights back of a dark glass plate carrying numbers corresponding to numbers given to the doctors, which are visible only when a light back of the plate is flashed. Thus if the doctor assigned number 8 is in some part of the hospital and is wanted at the telephone the operator can flash a light at every one of these signal stations which illuminates the number 8 and the doctor can then go to the nearest telephone.

The nurses' call system is a most important part of the electrical equipment. Annunciators at the nurses' stations or in the service rooms, operated by pear push buttons at patients' beds are largely used. Frequently this system is supplemented by a light over the door which lights simultaneously with the drop at the annunciator when the pear push is operated by the patient. This system should be arranged so that the annunciator can be reset and the light put out only when the nurse visits the room of the patient. In some cases the separate units of the annunciator system are supplemented by a general annunciator system in the main office, so that the time intervening between the patient's call and the visit of the nurse can be detected by the proper person in charge. This system is believed to be better than the system of semaphores over the doors entering the private rooms, which are usually reset by the nurses upon entering the rooms; the fault of these is that these semaphores can be reset without the nurses entering the room.

In large hospitals a general clock system is also desirable, the clocks being located at convenient positions throughout the building.

A watchman's clock system is also desirable. This, when properly used, insures proper safeguarding of the building and lessens the insurance rate. The most desirable form of watchman's clock system is that which utilizes the portable clock carried by the watchman, with the keys located at stations throughout the building in such a way as to insure the watchman's visit to every portion thereof.

A fire alarm system is also desirable. The most approved system is the selective system, with an auxiliary connection to the city or community fire alarm system such as is largely used in hospitals and school buildings.

### POWER PLANT

The question of the advisability of the installation of an electric power plant depends only upon the size of the hospital. Wherever fire room service for twenty-four hours is necessary and boilers of 100 H. P. capacity or greater are required, there can be little doubt as to the advisability of installing an electric power plant. In practically all hospitals steam at sixty pounds pressure is required for sterilizing purposes and also for laundry purposes. Steam also is required for cooking purposes at 40 pounds pressure. The piping system for the sterilizing and laundry work may be combined, but the cooking apparatus should be provided with a separate system of piping, while the heating is connected with still another separate system of piping. Thus the steam must be generated originally at 60 pounds pressure and be reduced to 40 pounds pressure for cooking and to approximately 2½ pounds pressure for heating purposes. It is just as easy and quite as economical to generate steam at 80 to 100 pounds, or even 125 pounds pressure, for the operation of engines for driving electric generators.

The exhaust steam from the engines may be passed directly into the heating system through a grease extractor and be used a second time; thus the electricity produced becomes a by-product. Otherwise the steam leaving the boilers at a high pressure must be passed through a reducing valve to reach the low pressure required for heating. The engine merely serves as a reducing valve and the most efficient kind of reducing valve. Only about seven to ten percent of the thermal value of the steam is utilized by the engines and the balance may be utilized in the heating system, thus making double use of the steam. In practical experience it has been found that the exhaust steam from the engine provides for a better circulation in the heating system, largely compensating for the small loss in thermal value. Usually in hospital work the amount of steam required by the engine and passing through same to the heating system is insufficient for heating purposes, and the deficiency is automatically made up by means of steam passing through a reducing valve.

In the summer, when heat is not required, a considerable proportion of the exhaust steam may be utilized for heating water for laundry purposes, for heating driers and for other purposes.

## COST DATA — TABLE Nº 1 — HOSPITAL BUILDINGS

| BUILDING | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | | AVERAGE COST PER CU. FT. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CUBITURE OF B'LD'G | | 2,096,000 | 1,313,187 | 1,687,000 | 3,339,000 | 4,234,103 | 1,343,819 | 734,335 | 1,406,400 | 508,375 | 1,327,415 | 905,600 | 249,700 | 210,300 | 1,718,010 | 1,877,931 | 927,415 | 534,150 | 1,967,767 | 3,768,282 | 777,508 | 367,200 | 3,704,287 | | |
| NO. OF PATIENTS | | 225 | 181 | 152 | 500 | 450 | 150 | 150 | 252 | 70 | 179 | 250 | 83 | — | 410 | 350 | — | — | 407 | 503 | 150 | 110 | 220 | | |
| CU. FT. PER PATIENT | | 9,320 | 10,605 | 11,036 | 6,676 | 9,400 | 8,958 | 5,042 | 6,082 | 7,262 | 7,416 | 3,623 | 2,937 | — | 4,130 | 5,337 | — | — | 4,834 | 12,440 | 5,182 | 3,340 | 16,837 | | |
| TOTAL COST OF BUILDING | TOTAL | 657,166 | 610,000 | 525,000 | 851,000 | 1,136,739 | 516,733 | 251,081 | 531,354 | 214,164 | 673,182 | 599,220 | 87,867 | 74,945 | 686,734 | 789,735 | 500,876 | 334,000 | 758,404 | 1,566,780 | 257,761 | 146,921 | 1,154,974 | | |
| | PER CU. FT. | .428 | .817 | .311 | .255 | .41 | .384 | .332 | .40 | .44 | .51 | .44 | .35 | .35 | .40 | .42 | .51 | .73 | .39 | .66 | .33 | .40 | .30 | | .382 |
| | PER PATIENT | 3,987.00 | 3370.70 | 3453.34 | 1702.00 | 3815.00 | 3445.00 | 1606.00 | 2720.00 | 3061.00 | 3800.00 | 1600.00 | 1027.85 | — | 1675.00 | 2256.60 | — | — | 1,863.40 | 4510.80 | 1,718.40 | 1,332.00 | 5153.00 | | |
| COST OF HEAT. & VENTIL. | TOTAL | 86,461 | 55,500 | 41,660. | 104,705 | 141,157 | 40,335 | 26,452 | | 10,855 | 62,887 | 46,000 | 3,888 | 4,600 | 70,000 | 52,180. | 57,500 | In Power Plant. | 63,125 | 157,000 | 20,611 | 3,000 | 115,389 | | |
| | PER CU. FT. | .04 | .029 | .025 | .031 | .033 | .030 | .035 | | .018 | .06 | .05 | .022 | .022 | .04 | .028 | .06 | | .039 | .037 | .026 | .008 | .031 | | .035 |
| | PER PATIENT | 384.00 | 306.70 | 272.00 | 209.40 | 312.60 | 324.00 | 176.00 | | 155.20 | 460.00 | 184.00 | 47.00 | — | 170.30 | 150.00 | — | — | 155.06 | 452.14 | 137.40 | 27.27 | 527.22 | | |
| COST OF ELECTRIC SYSTEM | TOTAL | 26,339 | 15,920 | 12,962 | 51,729 | 27,652 | | 9,534 | 3,000 | | 26,886 | 7,000 | 1,700 | 2,800 | 8,700 | 43,501 | 6,800 | 1,100 | 14,366 | 29,675 | 8,000 | 2,200 | 13,364 | | |
| | PER CU. FT. | .012 | .008 | .007 | .003 | .006 | | .013 | .002 | | .02 | .008 | .007 | .011 | .005 | .024 | .007 | .002 | .007 | .006 | .011 | .003 | .006 | | .009 |
| | PER PATIENT | 111.00 | 88.00 | 85.00 | 63.46 | 61.40 | | 63.30 | 14.30 | | 143.00 | 34.80 | 20.00 | — | 21.22 | 141.30 | — | — | 35.30 | 68.72 | 60.00 | 20.09 | 90.63 | | |
| | PER OUTLET | 16.50 | | 7.35 | | 8.00 | | 10.30 | | | 13.00 | | | | | | | | | | | | | | |
| COST OF ELECTRIC FIXTURES | TOTAL | 7,971 | 3,250 | 5,000 | 9,772 | 10,000 | 3,575 | 2,160 | | | 6,561 | | | | 3,640 | 9,750 | 1,744 | | 4,000 | 6,823 | | 2,540 | 5,936 | | |
| | PER CU. FT. | .003 | .002 | .003 | .003 | .002 | .002 | .003 | | | .008 | | | | .002 | .005 | .002 | | .002 | .002 | | .007 | .002 | | .005 |
| | PER PATIENT | 35.40 | 18.00 | 32.89 | 19.54 | 22.22 | 24.86 | 14.40 | | | 36.00 | | | — | 9.00 | 28.00 | — | | 9.82 | 22.51 | | 23.09 | 27.00 | | |
| | PER FIXTURE | 7.00 | | 6.39 | | 5.80 | | 6.00 | | | 6.32 | | | | | | | | | | | | | | |
| COST OF PLUMBING SYSTEM | TOTAL | 61,789 | 43,600 | 37,800 | 55,332 | 109,664 | 32,600 | 23,000 | | | 65,285 | 17,000 | 6,200 | 2,825 | 51,439 | 72,640 | 65,000 | 10,000 | 62,650 | 111,200 | 20,900 | 12,197 | 102,614 | | |
| | PER CU. FT. | .029 | .033 | .022 | .013 | .026 | .024 | .03 | | | .05 | .019 | .025 | .012 | .03 | .04 | .09 | .018 | .032 | .03 | .02 | .036 | .019 | | .023 |
| | PER PATIENT | 274.00 | 253.04 | 246.05 | 110.60 | 243.70 | 217.33 | 153.00 | | | 542.50 | 68.00 | 73.00 | — | 125.45 | 206.11 | — | — | 154.00 | 363.70 | 139.33 | 110.90 | 467.00 | | |
| | PER FIXTURE | 226.40 | | 143.70 | | 168.65 | 150.00 | 136.00 | | | 253.00 | | | | | | | | | | | | | | |
| COST OF REFRIG. PLANT & PARTS | TOTAL | 17,308 | 16,900 | 15,700 | 25,947 | 37,722 | | 5,300 | | 3,368 | 21,211 | | 443 | | | 44,800 | 62,000 | | 6,882 | 58,250 | 3,500 | | 7,455 | | |
| | PER CU. FT. | .008 | .008 | .008 | .008 | .009 | | .007 | | .007 | .01 | | .002 | | | .021 | .066 | | .003 | .017 | .004 | | .002 | | .012 |
| | PER PATIENT | 77.00 | 93.92 | 90.15 | 51.88 | 83.82 | | 35.50 | | 48.10 | 118.00 | | 8.21 | — | | 114.50 | — | | 17.01 | 192.24 | 23.33 | | 33.80 | | |
| COST OF VAC. CL. SYSTEM | TOTAL | — | 1,900 | — | — | 2,603 | | | | — | — | | | — | 3,873 | 3,985 | 2,400 | — | 3,628 | | 4,500 | | — | | |
| | PER CU. FT. | — | .001 | — | — | .0006 | | | | — | — | | | — | .003 | .003 | .002 | — | .002 | | .006 | | | | .0023 |
| | PER PATIENT | — | 10.49 | — | — | 5.70 | | | | — | — | | | — | 13.60 | 17.10 | — | — | 9.80 | | 30.00 | | | | |
| COST OF ELEVATORS | TOTAL | 22,225 | 11,200 | 8,360 | 22,473 | 32,280 | 16,515 | 2,458 | | | 16,100 | 8,000 | 1,115 | | 6,280 | 19,000 | 8,800 | 1,500 | 7,625 | 16,500 | 2,000 | 2,700 | 5,855 | | |
| | PER CU. FT. | .016 | .006 | .005 | .007 | .008 | .012 | .003 | | | .013 | .009 | .005 | — | .003 | .01 | .009 | .003 | .004 | .005 | .01 | .008 | .0016 | | .007 |
| | PER PATIENT | 99.00 | 61.80 | 55.10 | 44.95 | 71.73 | 110.00 | 16.30 | | | 90.00 | 32.00 | 13.00 | — | 15.12 | 54.28 | — | — | 18.73 | 32.45 | 60.00 | 24.54 | 26.61 | | |
| COST OF LAUNDRY EQUIPMT | TOTAL | 9,729 | 6,320 | 5,956 | 11,707 | 20,716 | 3,298 | 3,873 | 4,984 | — | — | | | 16,000 | | | 38,382 | — | | | | | 15,601 | | |
| | PER CU. FT. | .004 | .003 | .004 | .003 | .005 | .004 | .005 | .004 | — | — | | | .08 | | | .089 | — | | | | | .008 | | .017 |
| | PER PATIENT | 43.20 | 34.90 | 33.11 | 23.41 | 46.00 | 88.52 | 24.00 | 21.40 | — | — | | | — | | | — | — | | | | | 709.13 | | |
| COST OF KITCHEN EQUIPMT | TOTAL | 3,259 | 6,475 | 4,000 | — | 18,802 | 4,118 | | 8,000 | | 6,800 | | | — | | | — | — | | | | 2,800 | 8,000 | | |
| | PER CU. FT. | .001 | .003 | .003 | — | .003 | .003 | | .006 | | .005 | | | — | | | — | — | | | | .007 | .002 | | .0037 |
| | PER PATIENT | 14.30 | 36.00 | 26.32 | — | 30.70 | 27.45 | | 33.00 | | 38.35 | | | — | | | — | — | | | | 22.72 | 36.66 | | |
| COST OF POWER PLANT | TOTAL | 15,000 | 7,400 | 7078 | 15,440 | 21,570 | | 4,850 | — | 14,176 | | | | — | | In Elect. Syst. | — | 161,800 | | | | | 66,000 | | |
| | PER CU. FT. | .007 | .004 | .004 | .005 | .005 | | .006 | — | .028 | | | | — | | | — | .302 | | | | | .018 | | .047 |
| | PER PATIENT | 66.66 | 40.90 | 46.50 | 30.88 | 47.90 | | 30.00 | — | 202.80 | | | | — | | | — | — | | | | | 300.00 | | |
| | PER K.W. | 75.00 | 30.00[3] | 70.78 | 44.11[3] | 93.86 | | 75.00 | — | 141.00[3] | | | | — | | | — | | | | | | | | |
| PERCENTAGE CONTRACTS BEAR TO TOTAL COST OF BUILDING | BUILDING | 72.2 | 73.4 | 75.2 | 67.1 | 74.26 | | | | | | | | | | | | | | | | | | | 72.44 |
| | HEAT. & VENT. | 9.6 | 8.1 | 7.9 | 12.3 | 8.1 | 9.4 | 10.2 | | 5.0 | 12.0 | 11.8 | 6.9 | 6.1 | 10.2 | 6.6 | 11.5 | | 8.4 | 10.0 | 8.0 | 2.0 | 10.2 | | 7.2 |
| | ELECTRIC | 2.9 | 2.8 | 2.5 | 3.7 | 1.8 | .6 | 4.6 | .6 | | 4.0 | 2.0 | 2.0 | 3.3 | 1.3 | 6.02 | 1.8 | .8 | 1.9 | 1.6 | 3.5 | 2.0 | 1.7 | | 2.4 |
| | E. FIXTURES | .9 | .5 | .9 | 1.1 | .6 | | .8 | | | 1.0 | | | | .6 | 1.3 | .5 | | .5 | .5 | | 1.9 | .4 | | .80 |
| | PLUMBING | 6.9 | 7.5 | 7.1 | 6.3 | 6.4 | 6.3 | 9.2 | | | 9.6 | 4.6 | 7.0 | 3.4 | 7.5 | 5.5 | 16.0 | 3.0 | 6.3 | 6.9 | 6.0 | 8.0 | 9.0 | | 7.6 |
| | REFRIG. | 1.9 | 2.8 | 2.6 | 3.5 | 2.1 | | 2.1 | | 1.8 | 8.1 | | .8 | — | | 5.8 | 12.3 | | .9 | 4.3 | 1.5 | | .6 | | 2.9 |
| | VAC. CLEAN. | — | .3 | — | — | .15 | | | | — | — | | | — | .8 | .8 | .4 | | .5 | | 1.7 | | | | .80 |
| | ELEVATORS | 2.5 | 1.8 | .84 | 2.4 | 2.6 | 3.2 | 1.0 | | | 2.4 | 2.0 | 1.8 | — | .9 | 2.5 | 1.6 | .8 | 1.0 | 1.2 | 3.8 | 2.0 | .8 | | 1.76 |
| | LAUNDRY | 1.1 | 1.0 | 1.1 | 1.4 | 1.4 | 1.2 | 1.4 | .9 | — | — | | | 21.8 | | | 10.6 | | | | | | 1.4 | | 3.9 |
| | KITCHEN | .4 | 1.0 | .76 | — | .73 | .8 | | 1.6 | | 1.1 | | | — | | | | | | | | 2.0 | .7 | | 1.01 |
| | POWER PLANT | 1.6 | 1.0 | 1.3 | 1.8 | 1.8 | | 2.0 | — | 6.6[3] | | | | — | | | | 41.0 | | | | | 6.0 | | 2.8 |

① Provides capacity for several other buildings. ② No piping included. ③ Large amount of piping involved.

In many such plants the electric current is being made at a cost of one cent per K. W. H., and one of our largest New York hospitals made their electric current for ⅝c per K. W. H. In another of our New York hospitals an installation costing $17,000, and including electric power plant and refrigerating plant, resulted in a saving of $7,100 annually.

### FIXED EQUIPMENT

In the determination of the nature and amount of fixed equipment required, the size and character of the hospital must be the determining factor, and this is a matter which must be considered from many standpoints. First, the needs of the hospital are to be regarded; second, the quality of workmanship, material and finish are most important, and third, the efficiency of the equipment should be carefully considered. A consideration of the size of the hospital with the number of its beds and the kind and amount of work to be accomplished in a given time will all be determining factors. From the standpoint of economy of maintenance and operation much depends upon the character of the installation of the apparatus, which must be the highest quality in every respect. The maintenance cost of cheap apparatus is so high, and the annoyance of frequent repairs, and interruptions of service, are so great that only the best apparatus may safely be used. Only such equipment should be selected as can be readily replaced in case of necessity. Much equipment is especially designed with a result that a great delay is experienced in purchasing repair parts when same become necessary. Standard equipment will in nearly every case answer the same purpose as specially constructed equipment.

The cooking, laundry and sterilizing requirements are generally understood. The elevator equipment also involves no specially difficult problem. In this connection, however, it is a common practice for the building committee and the architect to leave the matter very largely to

the elevator manufacturer, whose specifications are too often used with a result that the installation is elaborate and expensive. This matter should be left largely in the hands of the consulting engineer, for bids based on independently prepared plans and specifications will result in a complete equipment at the lowest cost.

Many hospitals are over-supplied with equipment, particularly in the laundry, largely due to the use of manufacturers' plans and specifications for this equipment. Frequently hospitals have laundry equipment much in excess of actual requirements, with some pieces of apparatus which are almost never used.

ate. Mention may be made of a device recently introduced consisting of a white enameled metal rack, which is designed for attachment to the bed or to the wall for holding all of the toilet necessities in a sanitary, neat and compact manner. This rack provides for the holding of the towel, wash cloth, hair brush, comb, tooth brush, drinking cup, etc., so that all of these can be placed in a space 7½ inches long by 5 inches wide.

### COSTS

A great deal has been written concerning the cost of hospital buildings. Any statement of cost based upon the

COST DATA — TABLE Nº 2 — HOSPITAL BUILDINGS

| BUILDING | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | | AVERAGE COST PER CU. FT. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CUBITURE OF B'L'D'G | | 905,800 | 249,700 | 210,300 | 1,327,413 | 1,718,010 | 1,817,931 | 927,415 | 554,150 | 1,967,762 | 3,768,282 | 777,508 | 367,200 | 2,096,000 | | |
| COST OF CONSTRUCT'N | | 320,620 | 72,221 | 49,320 | 441,682 | 541,214 | 540,539 | 224,050 | 219,900 | 594,131 | 1,016,132 | 190,250 | 120,384 | 647,045 | | |
| COST OF MECH. EQUIPM'T | | 78,600 | 15,146 | 25,625 | 237,500 | 145,540 | 243,256 | 276,826 | 174,100 | 164,273 | 550,648 | 67,511 | 26,187 | 250,121 | | |
| TOTAL COST OF B'L'D'G | | 399,220 | 87,367 | 74,945 | 679,182 | 686,754 | 783,795 | 500,876 | 394,000 | 758,404 | 1,566,780 | 257,761 | 146,521 | 897,166 | | |
| EXCAVATION | TOTAL | 22,220 | 1,110 | 2,500 | 28,541 | 33,000 | 40,000 | 40,000 | 33,600 | 79,750 | 138,000 | 6,000 | 4,917 | 50,895 | | |
| | PER CU. FT. | .024 | .004 | .011 | .025 | .019 | .021 | .043 | .065 | .041 | .056 | .007 | .013 | .025 | | .026 |
| MASONRY | TOTAL | 111,700 | 25,216 | 23,420 | 175,503 | 260,950 | 196,760 | 91,050 | 105,900 | 243,147 | 417,095 | 71,650 | 53,654 | 222,878 | | |
| | PER CU. FT. | .12 | .10 | .11 | .132 | .152 | .105 | .098 | .198 | .127 | .111 | .092 | .146 | .12 | | .124 |
| STRUCTUR'L STEEL & IRON | TOTAL | 55,450 | 11,500 | 9,500 | 59,958 | 66,000 | 90,414 | 35,000 | 37,500 | 71,736 | 115,750 | 33,100 | 17,000 | 80,648 | | |
| | PER CU. FT. | .06 | .05 | .04 | .045 | .038 | .048 | .038 | .070 | .036 | .031 | .043 | .046 | .04 | | 045 |
| CARPENTRY | TOTAL | 20,400 | 7,400 | 6,500 | 46,348 | 53,500 | 60,000 | 22,000 | 5,800 | 63,535 | 61,000 | 19,025 | 12,000 | 71,225 | | |
| | PER CU. FT. | .022 | .03 | .03 | .035 | .032 | .032 | .024 | .018 | .033 | .016 | .024 | .033 | .035 | | .028 |
| ROOFING | TOTAL | 18,000 | 5,800 | 3,000 | 9,700 | 9,319 | 48,365 | 8,100 | 3,500 | 13,523 | 41,667 | In Steel & Iron | 8,367 | 23,080 | | |
| | PER CU. FT. | .02 | .02 | .014 | .007 | .005 | .026 | .009 | .018 | .007 | 011 | — | .024 | .011 | | .010 |
| GLASS & GLAZING | TOTAL | In Carpentry | | | In Carpentry | In Carpentry | In Carpentry | | In Carpentry | | 36,000 | 1,000 | 400 | 6,202 | | |
| | PER CU. FT. | — | | | — | — | — | | — | | .0035 | .001 | .001 | .003 | | .0036 |
| SKYLIGHTS & SHEET METAL | TOTAL | In Roofing | | | In Roofing | In Roofing | In Roofing | | In Roofing | In Roofing | In Roofing | 8,525 | In Roofing | In Roofing | | |
| | PER CU. FT. | — | | | — | — | — | | — | — | — | .011 | — | — | | .011 |
| PAINTING | TOTAL | 5,000 | 1,095 | 950 | In Carpentry | 4,250 | In Carpentry | | In Carpentry | 3,564 | In Carpentry | In Carpentry | 5,000 | 26,478 | | |
| | PER CU. FT. | .005 | .005 | .004 | — | .002 | — | | — | .002 | — | — | .014 | .013 | | .006 |
| LATHING & PLASTERING | TOTAL | 10,000 | 2,660 | 1,750 | 16,500 | 22,800 | 20,000 | 6,000 | 400 | 20,225 | 57,500 | 15,000 | 10,060 | 41,237 | | |
| | PER CU. FT. | .01 | .017 | .008 | .012 | .013 | .011 | .007 | .0008 | .01 | .01 | .009 | .027 | .026 | | .0123 |
| COMPOSITION FLOORING | TOTAL | | | | 13,103 | 20,000 | 14,000 | | 5,000 | | 29,000 | 3,750 | In Masonry | 8,106 | | |
| | PER CU. FT. | | | | .01 | .015 | .008 | | .009 | | .008 | .002 | — | .004 | | .008 |
| TILES MOSAICS & MARBLE | TOTAL | 46,000 | 17,000 | 1,200 | | 18,200 | 31,000 | 1,500 | 600 | 41,260 | 65,600 | 11,000 | 2,886 | 63,029 | | |
| | PER CU. FT. | .05 | .07 | .006 | | .016 | .017 | .0016 | .0015 | .021 | .0174 | .014 | .008 | .031 | | .0211 |
| HARDWARE | TOTAL | 4,850 | 440 | In Carpentry | In Carpentry | 4,100 | 5,000 | 400 | 400 | 5,125 | 3,500 | 2,200 | In Roofing | 3,080 | | |
| | PER CU. FT. | .005 | .002 | — | — | .002 | .003 | .0004 | .0008 | .0026 | .025 | .0028 | — | .004 | | .005 |
| CAST IRON | TOTAL | 27,000 | In Steel & Iron | In Steel & Iron | 30,000 | 49,095 | 35,000 | 20,000 | 21,500 | 44,210 | 35,000 | 13,000 | 5,500 | 44,189 | | |
| | PER CU. FT. | .03 | — | — | .023 | .023 | .019 | .022 | .04 | .022 | .009 | .024 | .015 | .022 | | .022 |
| BRONZE & BRASS WORK | TOTAL | | | | | | | | | | | | | | | |
| | PER CU. FT. | | | | | | | | | | | | | | | |
| TOTAL COST PER CU. FT. | | .44 | .35 | .35 | .51 | .40 | .42 | .51 | .73 | .39 | .36 | .33 | .40 | .428 | | .432 |

It is especially recommended that arrangements should be made so that every piece of apparatus in the laundry, or for that matter in any part of the hospital, can be removed without serious expense. It is desirable that large doors or windows from the laundry directly to the outside should be provided of such size that any unit of the laundry equipment may be hauled in or out of the building. This is usually considered in connection with the power plant, but is more often overlooked in the construction of the laundry.

A careful consideration of the many little details necessary for the complete equipment of the hospital will go far towards giving complete satisfaction in the working of the hospital. These details are too numerous to enumer-

cost per bed may be misleading to the trustees, superintendent and others. For instance, a hospital caring for a special class of patients requiring extra rooms and special equipment cost $4,000 per bed. If the same building had been planned as a general hospital beds could have been placed in the special extra rooms mentioned, thus increasing the bed capacity of the building to such an extent that the cost of the building would not have exceeded $3,000 per bed. This hospital has special employees for special purposes and rooms, but perhaps not as many as would be required to care for the extra number of patients which might have been accommodated in the special rooms, but even after making liberal allowances for these conditions it is found that this hospital would not have cost over

$3,300 per bed if used as a general hospital instead of $4,000 per bed as it actually cost, based upon the number of patients accommodated.

After making a careful study of this matter of costs the author has come to the conclusion that a better basis of determining the cost of the hospital building is the cost per cubic foot. In determining the number of cubic feet of the hospital, measurements should be taken from the basement or sub-basement (lowest) floor level to the mean of the outside of the roof, and from outside to outside of walls. In other words, the cubic feet of air displaced by the exterior dimensions of the building should be considered, eliminating approaches, ballustrades and other projections not enclosing space.

It is true that it is quite possible to be wasteful in space, so that the cubic feet of space per patient may also well be given consideration.

In table No. 1 are presented segregated costs of the construction of twenty-two hospitals and hospital buildings. In the case of hospital No. 22 the cost per patient is shown to be $5,159, which is very high, while the cost per cubic foot is shown to be 30 cents, and this is very low.

It has been stated that no hospital building should cost in excess of 30 cents per cubic foot, but it will be observed by reference to this table that rarely is a general hospital built at such a low cost. The fact of the matter is that local conditions, the character of the hospital and its work, and the elaborateness of the structure must all be carefully considered in determining the price per cubic foot. Eliminating No. 17 (which is a boiler house), the cost per cubic foot of all of the hospitals listed averages .382 cent. The cost of the heating and ventilating equipment per cubic foot averages .033 cent (after eliminating No. 9, which included no boiler plant).

The cost of the electric system averages 1 cent per cubic foot; electric fixtures average .003 cent per cubic foot; plumbing averages .029 cent per cubic foot (omitting No. 16, which is a laundry building); refrigerating plants average .012 cent per cubic foot; vacuum cleaner systems .002 cent per cubic foot; elevators .007 cent per cubic foot; laundry equipment (excluding Nos. 13 and 16, which are purely laundry buildings) .004 cent per cubic foot; kitchen equipment .004 cent per cubic foot; power plants average .005 cent per cubic foot. Thus the construction of the building (exclusive of its fixed equipment) averages .273 cent per cubic foot, as shown by this list.

Table No. 2 gives a segregated statement of the cost of hospital buildings exclusive of equipment, in the case of thirteen hospitals.

In the case of certain items, as masonry, the cost per cubic foot corresponds very closely in the case of practically all of the hospitals listed. It is the author's belief that every hospital building should have its cost analyzed and segregated in some such manner as that shown in tables one and two. By this means extravagance in any particular item of the work may be successfully avoided.

I wish to express my appreciation of the courtesy and cooperation of Mr. D. D. Kimball, Mr. A. M. Feldman, Messrs. York and Sawyer, Messrs. McKim, Mead & White, Mr. James U. Norris, Mr. Alexander Candlish, Doctor George O'Hanlon, Doctor Robert J. Wilson, Mr. Reuben O'Brien, Doctor Frederick Brush, and Doctor S. Wachsman in the preparation of the above mentioned cost data tables.

### ORGANIZATION FOR INVESTIGATION

From time to time we learn of associations and authorities endeavoring to create a national investigating body or a central bureau for the purpose of making a comprehensive study of the subject of bettering the conditions of hospital institutions as a whole. A higher standard of efficiency would doubtless be obtained if such an organization existed, and it would better enable the authorities of the various hospitals and institutions to judge of their own defects and means of rectifying them. Some hospitals are aware of defects existing therein but take no steps to remedy them, while others are entirely oblivious as to the nature of troubles existing in their buildings.

In May, 1913, the Philadelphia County Medical Society appointed a committee to consider "ways and means by which the efficiency of hospitals in Philadelphia may be increased." An extensive study was made and the committee made three reports embodying the results of its study, together with an introduction on "The Principles of Hospital Efficiency" by the secretary of the committee. It is interesting to note that one of the most important findings of the committee was that no standards exist by which the efficiency of the hospital may be measured. The operating expense of one institution may be $3.00 a day for each patient and that of another a little over $1.00 per patient. The question naturally is raised as to whether the latter figure is a credit or a disgrace. It is pointed out that such a lack of standards is reflected in chaotic conditions. The committee stated that in 31 percent of the hospitals visited the records were so kept as to be useless for scientific purposes. Doubtless the conditions existing in this instance are very similar to those existing generally, so that there exists a most fruitful field for an elaborate and scientific investigation of hospital problems.

Whether such an investigation should be undertaken under the auspices of special interests by the government or by an association of hospital authorities may well be given the most careful consideration.

When we consider that there are nearly 7,000 hospitals in the country and that 9¾ percent of the entire population of the country annually receive hospital treatment we begin to realize the enormous amount of institutional work involved.

## Discussion on Mr. Bartine's Paper on the Building of the Hospital

BY D. D. KIMBALL,

Before the Seventeenth Annual Conference of the American Hospital Association, San Francisco, June 22-25, 1915.

Mr. Bartine's paper is the happiest possible combination of new suggestions and warranted warnings. A careful study of the article by every hospital building committee would result in a material improvement in the construction of new hospitals.

Especially to be commended is the advocacy of the employment of the thoroughly experienced architect, engineer and builder. It would scarcely seem necessary that the architect, engineer or builder should confine his practice to hospital buildings, for a general experience in other lines of work will bring to the hospital work much valuable information; but only those who have "gone through the mill" can appreciate the character and variety of the multitudinous problems peculiar to hospital building and the extent to which experience with these problems is valuable. The selection of the architect and engineer is so vitally important to the success of the hospital that no consideration of nepotism or friendship should govern the choice. The layman can hardly hope to visualize a building from the plans, as this requires a degree of experience not to be expected in those not engaged in some way in the erection of buildings. An ill advised selection of the architect and engineer will become evident to those responsible for the appointment only when the building

has assumed concrete form and its larger defects have become irremediable. If these defects happen to be of such nature that the hospital loses a possible economy in operation or facility of administration, a permanent extra expense will be involved. It is beyond imagination that one who has designed a dozen or fifty hospitals, or who has designed the equipment for them, or who has built these buildings, should fail to gather experience and information of the greatest value to the new hospital. Is it to be wondered that a hospital building built by architect, engineer and builder without previous experience in hospital planning, equipment and construction should fall far short of the highest ideals? And yet new institutions are constantly being built under such conditions.

Added emphasis might be laid upon the importance of seeking freedom from all nuisances, emphasis warranted by conditions actually existing in some cases. Proximity with industrial plants must always be avoided; otherwise annoyance will result from noise, smoke and odors. The location should always be remote from power, gas or rendering plants. The possible future development of the surrounding property along industrial lines may well be studied.

Concerning foundations, the number of test holes or drillings should be such that complete information concerning the character of the soil under the entire building should be at hand. The contour of the rock is sometimes very uneven. Two instances may be recalled in which rock was encountered at grade at one portion of the building, and was more than thirty-five feet below grade at other points under the building.

That the extent and efficiency of the mechanical equipment should not be sacrificed for the ornamentation of the building, or for the increase of its size, apparently needs no argument. Nevertheless many instances can be cited where this has occurred. Often this is due to the attitude of the architect, whose interest in the appearance of the building externally and internally exceeds his realization of the importance of the equipment.

The facts relating to the isolated electric power plant are well stated. This subject is further discussed by the writer in a paper to be read at another session of this meeting.

Reference is made to the importance of preventing changes in materials from those specified. Are such changes urged by the contractor for the benefit of the building? Are they not almost invariably urged for the benefit of the contractor's pocket?

The price for the work which the owner pays to the contractor includes the cost of the materials specified. The builder contracts to furnish these particular materials. Why then should the owner pay for one material and be asked to accept another? If the contractor were required to rebate the full difference in cost between the materials specified and those he proposes to furnish he would promptly lose his interest in the substitution. This is a serious evil which should be curbed. It operates not alone to the harm of the owner but to the disadvantage of the best contractors.

Mr. Bartine has well stated the problem of concealed piping. It is to be noted that he gives as 4 to 5 inches the depth of the floor fill where pipes must be concealed. Certainly 5 inches is desirable in every case where pipes must be placed between the concrete floor slab and the finished floor. All of this space is necessary for the installation of heating and plumbing pipes and electric conduits. It is not alone a question of the space required by the size of the pipe; but the steam pipe must be covered with asbestos, it must be protected from the concrete by sheet metal arches, it must be given proper pitch for drainage and it must have freedom for expansion and contraction. Often one pipe must cross another or an electric conduit. No consideration of a slight extra expense for an extra inch or two of floor fill should be allowed to endanger the successful installation and operation of the piping system.

Concerning ventilation I would like to add to what Mr. Bartine has said something suggested to me by Dr. Miller's admirable paper on "Hospital Ventilation From the Point of View of the Clinician," read in the Section on Hospitals A. M. A. a year ago. In the system of artificial ventilation generally applied to the hospital the trunk ducts system has been commonly used. Thus every room is served with air of the same temperature. In few cases the individual duct system has been used in hospital work, but in school building ventilation it is now being very generally used.

In the individual duct system a separate duct is carried from the fan or plenum chamber directly to the base of the vertical flue which rises to each room. The plenum chamber is divided into upper and lower parts, the temperature of the air passing through the upper chamber being slightly higher than that required for the ventilation of the rooms, and the temperature of the air in the lower chamber being approximately twenty degrees less. Connections are made from both of these chambers to the individual ducts with mixing dampers in each connection automatically controlled by a thermostat located in the room served. In addition volume dampers are installed in each duct to regulate the volume of air supplied to each room. Every mixing damper and every volume damper is placed directly at the plenum chamber, making for ease of adjustment and manipulation and assuring better attention on the part of the janitor. Such an arrangement has the merit of being easily intelligible to the janitor.

The chief advantage of this system, however, lies in the fact that exactly the required volume of air at the exact temperature demanded by any and every individual room may be had, as required.

One or two sides of a building may be subjected to the warming effect of the sun, while the other sides of the building may be subjected to a severe cold wind. Under such conditions the rooms subjected to the cold wind and shade may require an air supply at a temperature as much as ten degrees higher than the rooms on the warm, sunny side.

The installation of the individual duct system increases the cost of the ventilating system by 2½ percent in large buildings and 5 percent in small buildings; but inasmuch as the individual system is decidedly superior to any other system because it makes it possible to meet every varied demand in the different rooms, it is certainly well worth its cost. This system has little or no effect on the operating cost of the plant.

Many of the results credited to the individual duct system can be obtained by the use of the double duct system, but with a very slight saving in cost of installation and with the serious objection that it involves a more complicated system of duct work with mixing and volume dampers scattered all over the building. In many cases these dampers are necessarily placed in inaccessible positions; thus they are hard to get at and their location is often forgotten and more often neglected. For these reasons the system is much more difficult to maintain in an efficient condition, and the results obtained are correspondingly less satisfactory.

May I suggest also that the installation of a number of small fan units is much preferable to the use of a less

number of large fans? The installation and operation of the smaller units involve less complication in design and operation; a small system is always more easily understood by the janitor, and a number of small plants rather than a single large plant will always be found a more flexible and satisfactory arrangement. Usually a sufficient saving in the cost of duct work is made to offset the slightly increased cost of a number of small units over the cost of a less number of large units. The use of small units permits of their distribution about the building in such a way as to involve less interference with the building construction and use of the basement.

From the standpoint of the engineer the method of operating room lighting proposed by Mr. Bartine is to be commended, for by such means the best illumination may be had at a reasonable cost and all the objections made to other methods of operating room illumination seem to be met.

To complete the clear presentation of the case of the electric generating plant it is only necessary to state that the slight extra steam pressure required for the operation of the engine involves no additional hazard, nor is the expense of generating steam at the higher pressure greater. Instances where such plants generate electric current at or near one cent per kilowatt hour are numerous.

Naturally the consulting engineer will agree with Mr. Bartine's statement concerning the use of manufacturer's specifications for equipment. And this is so because he sees more of the resulting misfits and extravagances resulting therefrom. But another source of evil in this connection is the occasional desire of laundry and kitchen heads for more apparatus or more elaborate and expensive apparatus than the size of the hospital warrants.

To emphasize the reference to openings for laundry and other mechanical apparatus may I instance a case coming under my personal observation recently? At a new hospital, costing three-quarters of a million dollars and not yet occupied, a large section of the laundry building wall had to be cut out in order to get the washers and mangles into the building.

No more enlightening table of costs than Mr. Bartine's has been presented. The adoption of the suggestion that the cost of every future building be so divided and analyzed would result in unexpected benefits. Possibly a further classification of the average costs might be made to advantage. By knowing the nature of the equipment in these different buildings and the different purposes served by the buildings it should be possible to determine a fair cost per cubic foot, as, for instance, the cost of a certain class of ventilation in a certain class of hospital. The writer has carried out such a plan in connection with school building ventilation with considerable success.

## The Mechanical Equipment of Hospitals[1]

BY D. D. KIMBALL,
President of the American Society of Heating and Ventilating Engineers; Member New York State Commission on Ventilation.

The mechanical equipment of the hospital is one of its most important features, for upon the success or failure of the mechanical equipment largely depends the comfort of the occupants, convenience of the staff, and the general efficiency of the hospital. Moreover, the expense of operating and maintaining the mechanical equipment is usually one of the largest, if not the largest, single item in the cost of the conduct of the hospital.

A consideration of this most important phase of the hospital building will be attempted. The most important element thereof is the heating and ventilating plant. Reference will first be made to ventilation, and an effort will be made to review briefly the results of the last three years of study and investigation of the ventilation problem.

In a paper presented before the Fifteenth International Congress on Hygiene and Demography[2] the writer classified the different phases of the problem substantially as follows:

First, problems of chemistry, including:

(a) Chemical composition of air; with special reference to oxygen, carbon dioxide, ozone; and elements of the air to which but little thought is now given.
(b) Organic matter; that is, that due to exhalations and body excretions.

Second, problems of air conditioning:

(c) Dust.
(d) Humidity.
(e) Temperature; optimum; effect of high, low, and varying.

Third, relating more especially to the mechanics of ventilation:

(f) Air volume, for different classes of people as affected by different systems of ventilation or different degrees of diffusion.
(g) Air movements; currents, drafts and breezes.
(h) Heating of air; is it injured by heating?
(i) Cooling.
(j) Recirculation.

And fourth, certain incidental problems:

(k) Natural versus artificial ventilation.
(l) Relation of ventilation to rest, sleep, normal activity, and violent exercise, and ventilation as affected by age, sex, climate, and different conditions of health.
(m) Methods of determining the effect of ventilation and its elements upon the individual and upon masses of people.
(n) Efficiency of installation and operation.

We will consider briefly the present viewpoint on each of the above.

It is generally agreed that the oxygen content of the air is not lessened, nor the $CO_2$ content increased in an occupied apartment sufficiently to enter into consideration in the problem of ventilation. Nevertheless, experiments of the New York State Commission on Ventilation show a decided increase in appetite on the part of the subjects in fresh air as compared with their appetite in stagnant air of the same temperature and humidity, even though the stagnant air is kept in motion; whereas the appetite does not appear to be affected by the introduction of $CO_2$ in the air supply to the extent of over 50 parts in 10,000 parts of air in the experimental chamber.

In connection with the subject of the chemistry of the air may be quoted the final conclusion of the report of the first year's work of the New York State Commission on Ventilation, as follows:

"The chemical changes in the breathed air of occupied rooms are of comparatively minor importance, but the substances present in such air appear to exert one definite measurable effect, a decrease in the appetite for food, an observation which for the first time offers scientific evidence in favor of fresh air as compared with stagnant air of the same temperature and humidity."

Recent experiment emphasizes the conclusion above stated. Inasmuch as oxygen is the active agent of the processes of oxidization which go on in the body, is it not possible that even the slight diminution of oxygen occurring in the occupied apartment has a direct effect on the extent of oxidization within the body? Or shall we credit the results of these experiments, several times repeated, to spooks?

[1]Read before the Seventeenth Annual Conference of the American Hospital Association, San Francisco, June 22-25, 1915.

[2]Washington, D. C., September 22-28, 1912.

Certainly $CO_2$ requires no further study. Its only significance lies in its value as an indication of the extent of the fresh air supply and its diffusion.

Ozone is not now considered a factor in ordinary ventilation. Doctors Jordan, Carlson and Sawyer[3] and others have shown that it has no value as a bacteriacidal agent within such concentrations as are not harmful to people.

Professor Czaplewski[4] states:

"As regards the air-purifying properties claimed for the gas: (a) We need not count on a destruction of bacteria in the air by ozone, nor their destruction on the walls of rooms, nor on objects in the room. (b) There is no oxidation of the organic dust particles. (c) There is, however, a positive effect on certain scents and the odors given off by the same.

"In ozonization of air we must differentiate between (a) ventilation with ozonized fresh air (best central ventilation); (b) ozonization of enclosed room air. The former is preferable without question, and is the only one that need be considered in the development of the ozone ventilator problem. Ozonization of room air is often only a makeshift of dubious value. Tests with ozonization of room air allow no very valid conclusions which might be applied to the ventilation of rooms using ozonized fresh air."

In general it has been used in concentrations of one part in two to four million. Recently the suggestion has been offered that it might have value if used in concentrations of one part to ten million. No entirely convenient means has been suggested for determining the degree of concentration in field work.

As to organic matter of a toxic nature in the air of an occupied apartment, the result of recent experiments and authoritative opinion seems clear that no such matter exists. Weisman[5] has ably presented the facts relating to this much debated subject and reaches what appears to be the justified opinion that "so far as danger to health from any effects of poor ventilation is concerned, the presence of sensitizing material in the breath is not a factor to which such ill effects may be attributed."

Odors may be said to be of no physiological importance, but nevertheless our sense of common decency dictates that our occupied apartments should be free therefrom, and this may best be accomplished by fresh air supply. To what extent or in what manner disagreeable odors may have a reflex action on our physical and mental condition is not now known. It may be altogether psychological, but even though this be so and the effects of odors are not physiologically harmful, they may be annoying or disturbing enough to sensitive people to warrant the use of all possible means for their elimination. The report of the first year's work of the New York State Commission on Ventilation, in conclusion 7, suggested that possibly the reduction in the appetite of the subjects in stagnant air might be due to the subconscious effect of odors. This possibility is now being experimentally investigated.

Dust as it ordinarily exists in the occupied apartment may not be considered seriously harmful. In general its bacteria-bearing proclivities go the way of the theory of areal infection. Nevertheless our desire for ordinary cleanliness will bring about the elimination of the dust nuisance to the greatest possible extent, and in no place with such care as in the hospital, for here the last degree of danger of germ-laden dust must be removed. Especially is this so because of the lowered vitality of the hospital patient.

The following by Prof. Winslow[6] is in accordance with the generally accepted view of the dust problem:

"We have a reasonably good basis for the conclusion that a count in the neighborhood of 100 microbes per cubic foot is entirely normal for city air, and the results reported in regard to the proportion of mouth streptococci found do not lend any weight to the belief that such air can play any part in the transmission of microbic disease. For dust particles comparatively few determinations have been reported by methods at all comparable with ours. Here, too, however, there seems no reason to conclude that a dust count of half a million to a million particles (visible under the $\frac{2}{3}$-inch objective) indicates anything more than a normal and innocuous condition."

Many of the trade dusts constitute a really serious menace to the health of the workers, especially the hard, sharp metallic, stone and similar dusts. No phase of ventilation is of greater importance than the elimination of trade dusts by suitable mechanical exhaust systems. Many of the states have passed laws requiring such ventilation.

Concerning humidity a writer in a late issue of THE MODERN HOSPITAL makes the statement that "We must have humidity, and the amount has not been settled." In support of the first part of this statement and in apparent refutation of the second part, there might be quoted a few of the many authorities who determine the desirable degree of humidification to be substantially as follows:

| | | | |
|---|---|---|---|
| Wolpert[7] | 40-60% | Riepzchel[14] | 30-40% |
| Oesperlen[8] | 40-60% | Richardson[15] | 40-60% |
| Scherer[9] | 30-60% | Shaw[16] | 50% |
| Paul[10] | 40-60% | Shepherd[17] | 30-55% |
| Rietschel[11] | 40-60% | Brefflar[18] | 40-50% |
| Smith[12] | 50-60% | Evans | 60% |
| Rubner[13] | 30-60% | | |

In the practice of artificial humidification 30 per cent has been regarded as the minimum and 50 per cent the maximum for which provision must be made. The lower humidity is that provided for extreme cold weather because there exists no reason for believing that this is insufficient, because artificial humidification is expensive, and incidentally the lower humidity in cold weather prevents frosting of windows.

In explanation of the statement that humidification is expensive it may be explained that over one-half horsepower of boiler capacity, burning approximately three pounds of coal each hour, is required to humidify to 30 per cent each thousand cubic feet of air supplied per minute in zero weather. And this is about four times the boiler capacity and fuel saved by a reduction of ten degrees in air temperature.

Professor Winslow,[19] in referring to Miss Alice L. Lake's investigation of temperature and humidity conditions in six New York hospitals, makes the following observation:

"The air of the hospitals was very dry, irrespective of the method of ventilation, sixty-three out of seventy-five records being below 40 per cent of saturation. In the operating rooms the temperature, of course, was very high (in six cases out of twelve, over 74° F.) and the humidity correspondingly low (in five out of twelve cases, 30 per cent or below, in none over 40 per cent). It seems to me a serious question whether such dry air may not promote harmful evaporation from the exposed body cavity. Artificial humidification would not only lessen evaporation, but would diminish the cooling effect and so make it possible to avoid the extremely high temperatures now generally considered necessary."

There seems to be an almost complete unanimity con-

[3]The Journal of The Am. Med. Ass'n. Part 1, Vol. LXI, pp. 1007-1015.
[4]Metallurgical and Chemical Engineering, April, 1914.
[5]Biochemical Studies of Expired Air in Relation to Ventilation, Charles Weisman, M. S., 1913.
[6]Prof. C. E. A. Winslow, School Ventilation in New York City, Am. Jour. Pub. Health, Vol. 3, No. 2.
[7]Prinncipien Der Ventilation and Lustheilvung, 1860.
[8]Handbuch Der Hygiene, 1876.
[9]Aphprisnen Uber Herzung und Ventilation Der Schulhauser, 1881.
[10]Lehm Buch Der Herz und Lustungstechnick, 1885.
[11]Lustung und Herzung Von Schulen, 1886.
[12]Indoor Humidity, Am. Gas Light Journal, 1905.
[13]Archive Für Hygiene, Vol. XI.
[14]On air vitiation, 1910.
[15]Conservation by Sanitation.
[16]School Hygiene, 1908.
[17]Heating and Ventilating Magazine, December, 1913.
[18]School Hygiene, 1913.
[19]The Importance of Studying the Actual Conditions of Hospital Air, Journal American Medical Association, Nov. 7, 1914.

cerning the desirability of humidification. And yet there is not available an iota of scientific or exact data justifying the demand for artificial humidification, or proving that dry air is harmful in any way. Data concerning this important subject is most desirable. The next year's work of the Ventilation Commission will be directed largely along this line.

The bad effects of high temperatures, especially when combined with high humidity, are well known. The experiments of the Ventilation Commission showed a reduction of work voluntarily done of 37 per cent at 86 degrees and 15 per cent at 75 degrees, as compared with 68 degrees, all tests being made with 50 per cent relative humidity. These tests also gave positive indications of disturbances in the regulating and circulatory systems of the body.

Nothing has been offered indicating the desirability of temperatures lower than 68 degrees for normal beings at rest. Occasional lower temperatures, or a variation of temperature, in hospital work are advocated by many doctors, but scientific data concerning the value thereof are desirable.

The volumetric standards of air supply heretofore in use in ventilation work find a new basis in the new conception of ventilation, i. e., that it is the province of ventilation to remove the heat and moisture produced by the occupants of the room to be ventilated. To illustrate: 30 cubic feet of air per minute per occupant has heretofore been considered the amount of air required to be supplied to maintain a certain standard of purity of air in the occupied room. It is this amount of air which is required to remove the heat and moisture given off by one person when introducing the air into the room at ten degrees less than the room temperature, which is about as low as is possible without causing drafts or a chilling of the occupants. To what extent this may be affected by different degrees of air diffusion, by different systems of ventilation, or by the conditions of the occupants of the room is not yet determined.

Air movement is now regarded as a most important element of ventilation. Stagnant areas in an occupied room mean heat and moisture accumulations to an uncomfortable degree. The well known experiments of Dr. Leonard Hill[20] and his associates have conclusively proven that air motion may go far towards preventing heat retention in the body and promote comfort in an atmosphere of high temperature. Without air movement the heat and moisture of the body will form a hot, moist so-called "areal envelope," producing all of the discomforts of a room of high temperature and humidity. But that this air movement should be produced by currents of fresh air is an assertion which seems warranted by the results of the appetite experiments of the Ventilation Commission above referred to.

There is a constantly lessening dread of drafts. Many of the diseases formerly believed to have their origin therein are not now so regarded. There is also a growing appreciation of the value of room perflation.

Occasionally the statement is made that air is robbed of its freshness when heated, or is in some mysterious way devitalized. Not a shred of evidence exists to support this contention as applied to a modern ventilating system. If it were so no defense of the direct radiator in the patient's room in the hospital could be made, for the temperature therein is exactly the same as the temperature within the blast coils of the indirect or fan ventilating system. But there is believed to be no possibility of ill effect to the air in either case and both have their place.

[20]Publication 2170, Smithsonian Institute, 1913.

Reasonable objections might be offered to the excessive air temperatures which were in some cases formerly used in blast or furnace systems of heating. The air from the modern ventilating system is usually introduced into the room at approximately room temperature and never at over one hundred degrees even in systems having no direct radiators, nor does it ever come in contact with heating surfaces of a temperature of over 215 degrees to 225 degrees. At no time has it been possible, however, to find in steam heating systems air temperature up to 400 degrees, as has been asserted, for this temperature is equivalent to a steam pressure of three hundred pounds per square inch. In defective furnace systems (and furnace systems are not now used in hospitals) or in the case of air heavily laden with dust coming into contact with high temperature surfaces (for which there is no excuse) it is possible that the air may be injured in its passage through the heaters by the absorption of gas from the furnace or by the distillation of carbon monoxide from the dust in the air.[21]

But little artificial cooling work has been attempted, and the advantages obtained therefrom have not been clearly established. The proven ill effects of high temperatures lend the subject of artificial cooling added importance. A very limited amount of artificial cooling work has been attempted in banks,[22] residences and hospitals.

The cost of artificial cooling is very high. In the matter of installation approximately seven tons of refrigeration capacity is required for each ten thousand cubic feet of air per minute supplied by the ventilating plant, but if the plant is especially designed for cooling purposes the amount of air used may be somewhat less than that usually supplied for ventilating in winter.

The best method of cooling is by the means of a ventilating plant containing an air washer, the water circulated therein being cooled by a refrigerating plant. If the hospital plant is large and is to, or does, include an absorption type of refrigerating plant, so that the operating force is not necessarily increased, the operating expense of the air cooling plant is small, being limited practically to the expense of the water used by the refrigerating plant (much of which may be saved and used again, for other purposes in the hospital), and oil, waste and repairs. Where a compression type of refrigerating plant is used the expense for cooling becomes much greater, the cost of cooling 10 degrees being about equal to that of heating to 70 degrees in zero weather.

Further experimentation with recirculated air has been reported during the last year by Professor Bass in Minneapolis,[23] and by Dr. McCurdy at the International Y. M. C. A. College Gymnasium, in Springfield, Mass.[24] The former, with reduced air volumes but with individual air supply, experienced difficulty with odors which the use of an air washer did not eliminate. The use of ozone had previously overcome this difficulty. Much larger volumes of air than are customarily employed were used by Dr. McCurdy, and by the use of the air washer freedom from odors was secured. A large theater in Boston was ventilated throughout the last winter with recirculated air passing through an air washer, with entire satisfaction and a marked economy in fuel.

A preliminary experiment in the use of recirculated air by the Ventilation Commission has met with difficulties

[21]Dust in Relation to Heating, Conrad Meier, Trans. Am. Soc. Heating and Ventilating Engineers, 1912.

[22]Ventilating, Heating and Cooling Plant in a Bank Building, A. M. Feldman, Tran. Am. Soc. H. and V. Engineers, 1909.

[23]Experiments in School Room Ventilation with Reduced Air Supply Through Individual Ducts, Frederick Bass, Tran. Am. Soc. H. and V. Engineers, 1913.

[24]National Physical Educational Review, 1914.

from odors. Further experiments along this line are to be carried on to determine the efficiency of recirculation as a method of ventilation, the possibility of eliminating odors and the relative economy of operation. For the present no recommendation favoring recirculation may be made.

Natural, or window, ventilation is receiving more endorsement than ever, but as yet no scientific data are offered to prove that it is equal or superior to artificial ventilation. It has been especially urged for schools and hospitals.

The following is quoted from a paper by the author on "The Heating and Ventilation of School Buildings":[25]

"Usually a small class is the subject of this experiment, the class being conducted by specially selected and enthusiastic teachers; the students are given short lesson periods, ample rest periods, sleep periods and exercise periods. They are given special medical attention. Their physical welfare and mode of living are more or less subject to the care of nurses, their homes are visited to see that the best possible conditions are provided therein for the children, they are provided with medicines and furnished with special lunches. With all these helps it would be strange indeed if the physical and mental progress of these children were not remarkable. But is there any assurance therein that the progress made is due solely to fresh air, or that similar results could not be obtained in closed rooms properly ventilated?

"Experiments recently made seem to indicate that the elimination of the special diet alone lessens the results obtained in the open-air schoolrooms. What the results might be with the elimination of one or more of the other special features is not known. Whether similar results can be obtained in a closed room with a similar regime is not known.

"Manifestly a breeze can produce an air current through the windows upon but one or two sides of a building. The rooms on the other two or three sides of the building must fail to receive the proper air supply.

"It should be easier to secure proper results by selecting one capable engineer to operate a well designed and well installed system than by placing dependence upon a large number of people who have many other duties to perform and who know little of either the importance or method of operating the windows or plant to secure the best room conditions."

The following quotation is taken from Dr. James Alexander Miller's admirable paper on "Hospital Ventilation from the Point of View of the Clinician":[26]

"What, after all, is this open air on which we insist so strongly? Is it anything but the atmosphere with varying degrees of temperature, moisture and pressure in varying degrees of motion, together with certain impurities, chemical, bacterial or dust?

"Dust and bacteria in excess are always to be avoided, and certain varieties are harmful even in small amounts. In the open air as such can we adequately control these factors, and if we could, do we know just the ideal combination we would have?

"The outside air may be cold when our patients need it warm, it may be dry when they need it moist and vice versa, and, moreover, the dust problems of open windows cannot be overlooked.

"For years ventilating engineers have been asking us what condition of air we want, and we have no reply but 'fresh air.' This evidently may mean any variety of that very changeable article. It may well be that open windows are better than artificial systems, but we cannot say so definitely until we can state just what we are trying to accomplish. When this is stated the problem becomes one of engineering and economics.

"By open window ventilation are we not apt to get too much air for some patients and too little for others? Can we regulate the problem of drafts near the window and pockets of stagnant air in the corners?

"Then again it is evident that open window ventilation can never be automatically regulated. In wards this regulation would naturally devolve on the nurses, although the physicians should of course supervise it. With the multitude of other duties can we trust physicians and nurses systematically to employ the care and intelligence necessary?

"Certain it is, however, that even now the artificial system alone seems insufficient and that periodic flushing of wards with air from open windows seems reasonable and necessary. But on the other hand, it seems probable that open windows alone will be unsatisfactory.

"That the open air with all its variations when directly admitted to the wards may by no means always prove of just the desired condition and that its proper distribution to all points of the ward may be most difficult seems very probable. It would appear, therefore, that at present a combination of these two so-called systems is desirable, especially when we remember that in winter a heating system is always necessary and that ventilation is a natural corollary of the heating problem."

But little scientific data exist concerning the relation of ventilation to other than normal conditions of health. Reference is made to some phases thereof in Dr. Miller's paper above mentioned, under whose direction further studies are to be made by the Ventilation Commission. When the general problems of ventilation have been solved the solution of the allied problems will consist of modifications of general principles only.

To arrive at satisfactory methods of determining the effect of ventilation and its various elements is in itself a complicated problem, whether for experimental or practical purposes. The methods used by the Ventilation Commission in its laboratory work have already been reported upon.[27] The methods to be used in field work will be reported later.

A discussion of the efficiency of installation and operation of ventilating plants will be coupled with a similar discussion relating to the complete hospital plant at the conclusion of this paper.

The writer in THE MODERN HOSPITAL above referred to observes that the art or science of the engineer will not go far toward the solution of some of these ventilation problems. Granted, but only by the cooperation of the medical man, the laboratory expert, the psychologist, the engineer and all others interested will the most rapid progress be made, for the problem is a most complex one.

The New York State Commission on Ventilation, which has spent two years in investigation and experimentation, and has planned two years' further study, was made possible by two generous gifts from Mrs. Elizabeth Milbank Anderson through the New York Association for Improving the Condition of the Poor.

The members of the Commission, who serve without pay, include Prof. C. E. A. Winslow, formerly of the College of the City of New York, and now Professor of Public Hygiene, Yale University, chairman; Prof. F. S. Lee, Professor of Physiology in Columbia University; Prof. E. B. Phelps, Chemist of the U. S. Hygienic Laboratory; Dr. J. A. Miller, of the Bellevue Medical School and Hospital; Prof. E. L. Thorndike, Professor of Psychology in Teachers' College, and the author, Consulting Engineer. The Commission was organized in June, 1913, formulated its plans at once and began actual experimental work about December, 1913.

Much may be justly expected to result from the work of this Commission, for it is the first and only time that adequate funds have been available to study properly this baffling problem.

As stated by Dr. Miller, the problems of ventilation become purely those of engineering and economics when standards are but agreed upon. Then, as now, the mechanical equipment of the hospital will include the following

[25] The Heating and Ventilation of School Buildings, Am. School Board Journal, 1914.

[26] Journal of the Am. Medical Association, Nov. 7, 1914.

[27] Results of the First Year's Work of the New York State Commission on Ventilation, Am. Jour. of Public Health, February, 1915.

features, all but the last three or four being essential to every hospital:

Heating.
Ventilation.
Kitchen equipment.
Laundry equipment.
Sterilizing equipment.
Special warming devices.
Plumbing, including cold, hot, and sometimes cooled, water systems.
Fire protection service.
Electric system, including lighting, motors, heating devices, call system, telephones, clock systems (time and watchman), x-ray, electric baths, and special electrical equipments.
Incinerator.
Refrigerating plant.
Vacuum cleaning plant.
Electric power plant.

Manifestly a detailed discussion of all of the above may not be undertaken within the limitations of this paper. General and important principles will be given, as viewed by the author.

Steam heating versus hot water heating is still discussed. Undoubtedly in the days when only the old gravity steam heating system was available the hot water system was more satisfactory, and possibly more economical. Few, if indeed any, engineers of experience and free of manufacturing or contracting interests will assert that a hot water system, gravity or forced circulation, is the equal in low cost of installation, economy and convenience of operation, or otherwise with the modern vacuum steam heating system with its graduated control of steam to the radiators. It may be safely stated that not five per cent of the larger buildings now being built are heated by hot water systems, and the proportion would be less except for the advocacy of the hot water system by manufacturers and contractors having patented systems or devices for forced hot water systems, and except for the further fact that there exists an ill-founded prejudice on the part of some people in favor of the hot water system.

The hot water system is subject to the danger of freezing, is slow in heating and cooling off (the forced system being less objectionable in this respect), and it involves the risk of serious damage in the case of a break in the piping, as well as possibly a serious waste of water.

Air valves (always a nuisance) are eliminated only in the vacuum steam heating system. The claim advanced that a modulation of water temperature with the outside temperature may be had with the hot water system is less real and of less importance than represented. This advantage may be approximated in the vacuum steam system, and with a material reduction in installation and operation costs. The installation cost of the best vacuum steam system will not equal the cost of a forced hot water system. And, the general impression to the contrary notwithstanding, the latter system is the more complicated.

It is a misfortune that advantage has been taken of the success and popularity of the vacuum and graduating heating systems by some manufacturers who have foisted upon the public many inefficient and cheap graduating, float and thermostatic valves which have, in many cases, brought discredit upon the vacuum heating system.

These valves are subjected to severe service and to give satisfactory service they must be heavy in every part and be constructed according to certain essential principles. In the case of the graduating supply valve for hospital work it should be so constructed that its interior may be removed without disconnection of the valve from the radiator or piping, for which purpose it should contain an auxiliary stop valve. Thus the valve or radiator may be repaired without affecting any other unit in the system.

The float valve of the best make was very satisfactory, but many of them would, under certain conditions, become noisy. The thermostatic radiator return valves (of perhaps three or four of the best makes) are most satisfactory, being more efficient, durable and noiseless. These valves should be heavy in every part, require no strainer, the valve therein should close against the return pipe connection and not against the radiator connection, and the valve should have a vertical movement of not appreciably less than one-quarter of an inch from the seat when full open. A less movement will result in holding water in the radiator much of the time.

Direct radiation is generally advocated and used throughout the hospital building, with the possible exception of the operating room in the larger hospitals, where there is little or no objection to the operation of a mechanical plant throughout the heating season. The direct radiators should be of the hospital type, having a perfectly smooth surface, with sections spaced three inches on centers so that they may be readily cleaned. The radiators should be supported from the wall by means of heavy brackets, there being a space of not less than 3 inches, and preferably 4 inches, from the wall to the radiator, and 5 inches from the bottom of the radiator to the floor. In such an installation the floor is left entirely free and dirt-collecting areas do not exist.

One of the largest hospitals recently built in the East has been equipped with the regular pattern radiators, with legs resting on the floor and branches thereto run on the floor, the radiators being set close to the wall, so that cleaning the floor under and about the radiators and the wall back of the radiators or the radiators themselves is almost an impossibility.

The plan sometimes adopted of placing the radiators in enclosures under the windows is not to be recommended. While admitting that the radiators are not easily kept clean, it is contended that the plan of concealment of the radiators offers no improvement in this respect, inasmuch as the enclosure invariably becomes foul and cannot easily be kept clean.

The type of boiler to be used in a hospital plant is entirely dependent upon the size of the institution and the space available. Too often in small hospitals use is made of the sectional cast iron boilers for heating, with an auxiliary high pressure boiler, sometimes referred to as a steam generator, to provide steam for sterilizing and laundry purposes. Such an arrangement is not to be commended, for it results in the operation of two or more fires at all times and one fire might be sufficient for all purposes for the most of the year. Also, the small sectional boilers are not economical in operation. This arrangement results in a complication of piping and equipment. The object of this plan is usually to eliminate the need of a high grade engineer, in the belief that a janitor can operate the sectional heating boilers and the steam generator. It is a small hospital indeed in which the employment of high-grade firemen will not result in a saving in fuel more than offsetting the increased amount of wages.

In larger hospitals the use of the regular horizontal fire tube boiler is to be recommended. Only in the largest of plants, that is, those requiring 1,000 boiler H. P. or over, may the use of the water tube boiler be advised, for the fire tube boiler is equally safe, economical and durable.

Automatic stokers may be used for two purposes. First, to eliminate smoke where soft coal may be used to advan-

tage, and second, to save labor, which becomes possible only in plants of 1,000 boiler H. P. or over.

Recently more emphasis has been placed upon a study of the economical operation of hospital plants. The smallest percentage of such plants is equipped with devices enabling the determination of the economy of operation, and yet this is a very simply matter and very desirable.

The installation of coal weighing scales of the Fairbanks pattern, set in the floor, with platform 60 inches long and 48 inches wide, will enable the weighing of the coal as fired to the boiler. In larger plants a more elaborated equipment is possible. In addition to the coal scales some device for measuring the feed water as fed to the boilers should be installed, such as the Venturi feed water measuring device, or the Lea recording apparatus. This equipment will make possible a simple calculation by means of which the number of pounds of water evaporated per pound of coal fired may be determined for each day. This will give a very good line on the degree of economy with which the plant is operated. For a refinement of this determination the temperature of the water fed to the boiler may be either read systematically from a feed water thermometer, or better still, a recording thermometer may be used to record this temperature. The coal also may be analyzed to determine the heating value thereof, and then an exact determination of the efficiency of the boiler plant may be had.

To obtain the best results a plant log sheet should be used, upon which hourly readings should be recorded of the boilers in use, draft pressure, steam pressure, feed water temperature, outdoor temperature, weight of water fed to boilers, coal fired, ash removed, service rendered to the building, men on service in the boiler room, and supplies received and used. A running account of the coal may be included, this showing the coal on hand at the beginning of the day, that received during the day, the amount used during the day, the balance representing that remaining on hand. If an electric power plant is in use, corresponding records should be made of the operating details thereof.

A careful interpretation of the records thus obtained should bring about a marked economy in the operation of the plant. An instance may be cited of a 2,000 H. P. boiler plant which, previous to the keeping of such records, had operated at 51 percent efficiency. At the end of a year's use of apparatus and records as described, the plant was operating at 71 percent efficiency.

Too often the pumps used in the hospital plant are of the duplex pattern because of the fact that they cost less than the single cylinder pumps. The latter are much more economical in the consumption of steam and this becomes of importance during the non-heating season. The greater economy of the single cylinder pumps more than warrants their increased cost.

The piping system of the hospital is most complicated because of the varied service demanded. There must be, first, the high-pressure piping system operating at the maximum pressure required, which would be that required by the engine if a lighting plant is included, or that required by the laundry and sterilizer system if no lighting plant is included. Ordinarily the hospital lighting plant is operated at 80 to 100 pounds steam pressure and this would thus be the boiler pressure. The sterilizers should then be provided with an independent system of piping conveying steam at approximately 60 pounds pressure. The pressure required for the operation of the laundry apparatus is the same, but usually the laundry apparatus is so located that a separate system of piping may well be used therefor and this is desirable in any case. The kitchen apparatus requires steam at approximately 30 to 40 pounds pressure and should, therefore, be on a separate system of piping. The heating pressure, customarily 2½ pounds, involves necessarily a separate system of piping. Each of these systems is supplied with steam directly from the boiler header through an automatic pressure reducing valve.

Automatic temperature regulation fails to receive proper recognition only because a number of cheap devices have been used for the purpose and many cheap installations have been made.

There are now available two or three systems free of rubber diaphragms and similar causes of failure, and which may be counted upon to give accurate and lasting service. The use of such a system prevents overheating and results in marked economy of fuel.

There are two types of thermostats in ordinary use. The first is that known as the positive thermostat. This opens the valves or dampers wide or shuts them tight, providing a full supply of heat or no heat, and is liable to result in first overheating, and then underheating or drafts. This thermostat is not to be recommended, although it is largely used. The second is that known as the intermediate acting thermostat, which modulates the supply of steam to the radiators and the movement of the dampers in such a way as to graduate the supply of heat exactly in accordance with the demands of the rooms or the outside temperature. This thermostat is therefore to be recommended in all cases, except on radiators where a gravity steam heating system is used. The necessity of the use of the positive thermostatic control of the heat is in itself a condemnation of the gravity steam heating system and an argument in favor of the vacuum system wherein the supply of steam to the radiators, as well as the position of the dampers in the ventilating system can be modulated as required by room conditions.

In every plant steam and hot-water pipe covering is freely used, but the use of the highest grade materials is not as common as it should be. The use of the highest grade covering, which is naturally the most expensive, is amply warranted by the greatly increased saving of fuel resulting.

The use of sheet metal ducts for conveying air in a ventilating system is to be recommended in preference to the use of masonry ducts and flues, despite the fact that the sheet metal ducts cost slightly more. The sheet metal ducts are cleaner and involve less resistance to the movement of the air.

The use of air washers provides for a supply of clean air wherever ventilation is required, and this alone should be sufficient to assure their use in every case where ventilation is desired.

At a very slight extra expense humidification may also be best provided by means of the air washer. Further, the use of the best types of air washers provides for a considerable degree of cooling in warm weather without artificial refrigeration. In the case of two school rooms recently observed by the author it was found that with an outside temperature of 84 degrees a room temperature of 71 degrees was maintained throughout the day with a relative humidity not in excess of 65 percent.

Standard air washers are made 4 feet 10 inches, 7 feet and 9 feet long. The first provides a reasonable degree of air cleansing, but little cooling; the second provides a greater degree of cleansing and more cooling; and the third provides a maximum of cleansing and cooling. Ap-

proximately the same amount of humidification may be had from all of them.

The ventilation system of the hospital may vary in its extent. It may consist merely of exhaust fan ventilation for the laundry, kitchen, toilet rooms, diet kitchens and other service rooms, which should be divided into separate systems for laundry, for the general kitchen, for the toilet and service rooms, and for the diet kitchens. This smallest amount of ventilation may be supplemented by an exhaust fan system of ventilation for the large wards, and to this may be added a fresh-air supply fan system for the wards and important patients' rooms.

The extent and nature of this equipment must be dictated by the nature and location of the hospital. A hospital located in a rural district manifestly requires less artificial ventilation than one located in a congested city district. The author believes that a complete supply and exhaust system for all of the larger patients' rooms is amply warranted in the latter case, for ventilation by natural means cannot be assured in the case of a hospital surrounded by high buildings, particularly on days of dull or stagnant atmospheric conditions, and the opening of the windows often subjects the patients to the annoyance of noise, dust and drafts.

In the case of the kitchen, laundry and sterilizing equipment a desirable medium should be secured between underequipment and overequipment, the latter often resulting from the use of manufacturers' plans and specifications for these equipments.

In connection with plumbing equipment frequently resort is had to standard plumbing fixtures, with little consideration of the specially designed fixtures and equipments which several manufacturers make for hospital work.

For the drainage system wrought iron pipe in the so-called Durham system is mostly used. For the cold water distributing mains galvanized iron or steel pipe is largely used. A more durable pipe is the lead-lined iron pipe, which costs possibly twice as much as the galvanized iron pipe. For the hot water piping system galvanized iron or steel pipe is largely used, but this should never be inasmuch as it is short lived. The gases liberated in the hot water attack and rapidly destroy the iron and steel pipe. Brass pipe is much more durable than galvanized iron or steel pipe, but it is very expensive. For this work, also, the lead-lined iron pipe will be found quite as durable as the brass pipe and about one-third less expensive.

In some hospitals having a refrigerating plant water for drinking purposes is cooled and circulated to the kitchens, serving rooms, diet kitchens and to drinking fountains located in the corridors. For this purpose lead-lined or brass pipe should be used.

In general, the hot water supply is furnished by means of large storage tanks containing steam coils. Considered from all standpoints, this is probably the best means. It provides for an ample storage of hot water and eliminates the sudden demands on the boiler caused by instantaneous water heaters having no storage capacity, and steam and water mixing valves. Such instantaneous heaters and local mixing valves make necessary the installation of sufficient boiler capacity to provide steam for heating and other hospital purposes and the heating of the hot water to the extent of the maximum instantaneous demand, while in the case of the storage heaters the peak, or maximum load on the boilers is lessened because the heating of the water may be accomplished through a longer period of time. The author believes the advantages of such storage heater, together with the installation of the hot water distributing mains, are greater than any objections thereto. Certainly the loss of heat in distributing the water is no greater than the loss of heat in distributing the steam to the various points where it must be used for heating water in mixing chambers. There are available mixing valves, by means of which the water may be heated by the local injection of steam, which give satisfactory results and are as safe as any mechanical device may be, but the assurance of a constant supply of hot water within a temperature assuring protection against the burning of patients may best be secured by the use of the storage tank, wherein the temperature of the water is thermostatically controlled. Where possible it is recommended that one storage tank be provided for the laundry and kitchen, where water of a high temperature is desirable, with a separate tank for the remaining demands of the hospital where water of a lower temperature is desirable, to assure the protection of the patients against burning. These two heaters may be cross connected so that either one may serve both purposes while the other is being repaired.

The demands of the hospital electric system are well understood and it may therefore be only necessary to say that the use of direct current may be justly considered essential in a hospital where motors are used, especially if such motors are used in connection with the ventilation system. The alternating current motors are inherently noisy. Direct current motors operating at a speed not in excess of 900 R. P. M. may be had, which will be free from objectionable noise.

The most desirable system of electrical distribution is the three-wire 110-220 volt system, the lighting being accomplished by the use of 110-volt lamps, while the motors are connected to the 220-volt service. In all except the smallest installations the lighting and motors should be on separate systems of wiring back to the main switchboard. In large hospitals the low-tension service required for the call system, clock system and telephones may best be provided by means of motor-generator sets.

In hospitals costing $75,000 or over the installation of a refrigerating plant is most desirable. Where refrigerators are scattered over the building the brine system of distribution is to be preferred, as it eliminates the danger of ammonia leaks, although in small buildings it is possible to install a direct expansion ammonia system without appreciable risk.

In plants requiring not over five tons of refrigeration in twenty-four hours the best type of plant is the automatic refrigerating machine, which automatically starts and stops according to the demands for refrigeration. This is a motor-driven compression type of machine. In larger plants, up to 15 tons capacity, the usual compression type of steam-driven machine may best be used. In still larger plants the absorption type of plant will be found the most economical in operation inasmuch as it may be designed to operate with exhaust steam. The cost of water for cooling or condensing purposes is approximately the same in both the absorption and compression types of machines. Provision for the use of this cooling water should be made by means of storage tanks usually placed at the top of the building. This water may then be used in the laundry and kitchen, and in some cases it may be used to advantage in flushing the water closets of the building.

Vacuum cleaning plants are less used in hospital buildings than their merit deserves. In their present degree of development they are very efficient devices, and they surely provide the most sanitary method of cleaning.

Incinerators are generally used in all large hospital plants. They should be of the high-pressure pattern and of ample capacity. A single large incinerator located in the basement is usually found more satisfactory than the smaller incinerators distributed about the building because of the fact that the smaller incinerators may not economically be operated continuously at a sufficient temperature to destroy all refuse matter and garbage without offensive odors or smoke.

Nearly all large hospitals, that is, institutions costing $150,000 or more, have their own electric power plants. No institution or type of building has greater warrant for the installation of such a plant than the hospital. It has the longest period of heating of any type of building and the greatest possible use for the exhaust steam from the engines. The exhaust steam may be used for heating the building, for heating hot water, and it may be used to a large extent for drying purposes in the laundry. It may also be used in refrigerating plants of the absorption type. The latter has the special advantage of making use of the exhaust steam at a period of the year when a considerable portion thereof could not otherwise be used. The large amount of hot water required in the hospital also provides for an unusually extensive use of the exhaust steam during the nonheating season.

A brief explanation of my reason for advocating the double use of steam, first in the engine and then for heating, may be of interest. Assuming a boiler steam pressure of 100 pounds, each pound of steam will contain 1,189 heat units when reaching the engine. Upon leaving the engine at a pressure of approximately five pounds each pound of steam will contain 1,156 heat units. Thus but 33 heat units have been absorbed by the engine, or approximately 3 percent. Possibly five to seven percent more may be lost in condensation in the engine cylinders. Thus at least 90 percent of the original heating value of the steam is conveyed to the heating system. Practical experience has proven that exhaust steam is more efficient in heating work than live steam, so that a portion, and perhaps all, of the loss in the engine is compensated for in this way.

The heating demands of a hospital will be found to be three to four times greater, as related to boiler capacity and fuel consumption, than will the demands for electricity. The installation of the electric power plant will not in any way increase the boiler capacity required or the fuel consumption during the greater portion of the heating season. The additional amount of service required because of the installation of the electric plant is very small. In fact, in very small hospitals no extra service is demanded, in medium-sized hospitals one extra man may be required, and only in the largest hospitals will two or three additional men be required.

Usually the installation of an electric power plant will pay for itself within three to five years, including proper allowances for interest and depreciation. The extra cost of service is largely offset by the increased economy in the operation of the heating plant because of the higher grade of service employed.

Protection against interruption of service is quite as great as in the case of street service. In connection with over fifty isolated plants designed by the author no interruption of service has ever occurred and some of these plants have been in service twenty years.

It may be asserted that in no other department of hospital administration are the losses and wastes so great as in the maintenance and operation of the heating, power and mechanical equipments.

The successful design, installation and operation of the hospital plant involve a high degree of training and skill in the theory and practice of mechanical, electrical and sanitary engineering. These things are engineering problems, not medical or surgical problems. They are only remotely problems of administration. It is not to be expected, therefore, that the hospital superintendent or the hospital's business manager should be able to produce efficient and economical plant installation and operation. It is, however, unfortunate that oftentimes such expectations are entertained.

The suggestion offered by Mr. Bartine in his admirable paper on "The Building of the Hospital—Organization and Methods" that the hospital's operating engineer should be made a member of the advisory committee to the building committee is to be strongly commended. Many of these men are high-grade men of marked ability and have accumulated a wealth of information relating to the devices suitable for the equipment of the hospital plant. It is regrettable that every hospital should not have an operating engineer of this class, but, sad to relate, many hospital boards will not pay suitable salaries, preferring to save a few hundred dollars in salary while losing many times this amount in wasted fuel and depreciation of plant. The author has in mind one plant, the installation of which cost over $100,000, in which the unnecessary depreciation in the first year cannot represent less than $5,000, and the waste of fuel cannot represent less than $500 more, and all because the institution will not appropriate sufficient funds to employ a competent chief engineer at a cost of perhaps $500 above the salary now paid.

The ability of the operating engineer (and the ability of his assistants) and the efficiency and economy of the plant go absolutely hand in hand. The employment of cheap engineers and firemen inevitably means high fuel, water and repair bills and an increased depreciation of the plant.

It is not to be expected, however, that a man of such technical training and experience as to be capable of the design and installation of a mechanical plant, or who would understand the science of efficient and economical plant operation, will assume the position of operating engineer at a salary paid in such positions. The cooperation of the consulting engineer and operating engineer is much to be desired, but the varied experience and technical training of the consulting engineer is essential to assure the installation of the most durable and economical plant. Similarly the operation of the plant involves problems of fuel combustion, generation and distribution of steam and electricity, and the most efficient utilization thereof, in which theory and practice of the consulting engineer should be employed to supplement the experience of the operating engineer in order to secure the best results.

There are many consulting engineers who have personally designed and supervised the operation of hundreds of plants. It would be strange indeed if in this work they had not secured such information and experience as could be most advantageously applied to the installation of additional plants. If this experience has been largely in connection with hospital buildings just so much more valuable will it be to the prospective hospital.

The best efforts of the consulting and operating engineers may fall far short of the best attainable if the building committee or architect so reduces the amount available for the installation of the mechanical equipment that the best materials may not be used, or to such an extent that devices to determine the economy of the plant's operation must be omitted. The use of cheap valves, pipe and other materials will result in constant annoyance and

high repair bills. The use of cheap steam and hot water pipe covering materials will result in an excessive waste of heat, which may be neither detected nor prevented. The elimination of coal scales and boiler feed water measuring devices will surely result in a low boiler plant efficiency. Elaboration in the mechanical equipment is to be avoided by all means, but the essential requirements may not be ignored without involving a continuous and serious expense.

### Discussion of Mr. Kimball's Paper on the Mechanical Equipment of Hospitals

BY OLIVER H. BARTINE,

Before the Seventeenth Annual Conference of the American Hospital Association, San Francisco, June 22-25, 1915.

This paper, prepared by an engineer of twenty years' experience in the design and installation of hospital equipment, as well as the equipment of school and other public buildings, gives us an authoritative statement of the present status of the problem of ventilation and also of the latest developments in the line of hospital building equipment. The author has the advantage of the most intimate contact with the latest developments in the investigations of the problems of ventilation because of his membership in the New York State Commission on Ventilation and his official position as President of the American Society of Heating and Ventilating Engineers.

The statement of the present status of ventilation would indicate a definite conclusion as to the subject of temperature to the effect that high temperatures are decidedly harmful and the maximum temperature should not exceed 68 degrees. Also, that stale air has a definite effect on the appetite, which must indicate other and more serious effects. Apparently the problem of humidity is not yet settled, nor the effect of low temperature.

All doctors, hospital superintendents and others will be interested in the outcome of the study of natural ventilation as compared with artificial ventilation. It would seem as though this paper puts it squarely up to our superintendents and doctors to give scientific data concerning the relative merits of a really modern ventilating system as compared with the natural or window ventilation system.

In referring to the new method of determining the volumetric supply of air for ventilation, it is to be noted that the figures are based on the temperature of the air entering the room of 10 degrees less than room temperature. It is quite possible, and even probable, that for hospital work 5 degrees less than the room temperature as the temperature of the entering air would be better. This would double the volume of air or provide 60 cubic feet of air per minute per patient, which would doubtless be better for hospital purposes.

The distinction between old and new ventilating systems is emphasized. It may be that we have not given sufficient consideration and opportunity to the new ventilating systems and their possibilities. Undoubtedly the old systems were subject to many objections, especially in the matter of the high temperature of the air supplied therefrom. It is worthy of note that it is stated that the temperature of the air used for ventilation should not exceed the room temperature.

The reference to recirculation of air may be interesting from an experimental standpoint or in connection with some classes of buildings, but would hardly be applicable to hospitals.

The reference to the work of the New York State Commission on Ventilation is most interesting and every person interested in this subject should lend his cooperation. I would suggest that any data obtained concerning any of the problems of ventilation should be communicated to the Secretary of the Commission, whose address is St. Nicholas Terrace and 139th street, New York City. I understand that the Commission would be especially glad to receive any information concerning artificial cooling of hospitals.

The relative merits of steam and hot water heating have been presented to us in this paper by one who has used and observed both systems and whose opinions as stated are agreeable to my own experience in hospital heating and ventilating.

Concerning the use of devices for measuring the efficiency of the plants in operation, I can say from personal experience in the new building of the Hospital for the Relief of the Ruptured and Crippled in New York City, where we have these devices in use, that they are of inestimable advantage in maintaining the operation of the plant at the maximum efficiency. We certainly could not afford to be without them.

After experience in the use of both local heaters and storage tank heaters as a means of hot water supply, we adopted the storage tank system in the new hospital referred to with eminently satisfactory results.

The explanation given as to the relative merits of the isolated electric power plant is very clear and helpful. With the information given we may readily understand why these plants are so generally used in hospital work and why they bring about the economy noted. It is an interesting fact that of the thirty-one hospitals on Manhattan Island which have one hundred beds or more, 78 percent of them have their own electric lighting and power plants. Of the remaining number several are city installations and the policy of the City of New York, which is believed to be largely influenced by political motives, is against the adoption of isolated plants in city institutions. The efficiency of the isolated plant in the hospital appears to be due simply to the extent to which a double use of the same steam may be made.

We can all endorse in theory, if not in practice, Mr. Kimball's argument in favor of high-grade installation and intelligent operation. Nothing means inefficiency and waste to such an extent as cheap labor.

### Young Woman Serves Hospital as Superintendent and Takes Place of Ambulance Doctor

Over a picture showing Miss Julia Murphy, superintendent of the Southside Hospital, Babylon, Long Island, with an emergency grip in hand, entering a motor ambulance, the Brooklyn *Eagle* prints the following:

"When an ambulance call comes in to the Southside Hospital at 2 o'clock in the morning, no intern is yanked roughly out of the Land of Nod to go out on the case, for the institution hasn't an intern. Instead, Miss Julia Murphy, superintendent of the hospital, goes out, leaving one of the other nurses in charge.

"The territory served by the hospital is very large, covering almost the whole South Shore, as there is no reception hospital between Mineola and Southampton, and Miss Murphy is often treated to rides of fifty or sixty miles. During the eleven months the ambulance has been in commission Miss Murphy has gone out seventy-five times, as far east as Moriches and as far west as Manhattan.

"Miss Murphy's last call, a week ago yesterday, from Hemlock Beach, opposite Amityville, was a thriller. A member of the Gilgo Coast Guard crew was drowned there, the call coming by way of Quogue. Within three-quarters of an hour after the call had been received Miss Murphy and another nurse, with a pulmotor, were at the scene, having traveled five miles in the ambulance and five miles in a fast power boat. The man could not be revived, however."

# CURRENT HOSPITAL LITERATURE

ALBERT ALLEMANN, M. D., Foreign Literature.
*Army Medical Museum and Library, Office of the Surgeon-General United States Army.*

**A War Hospital for Mental Diseases** (Ospedale psichiatrico di guerra). Rivista ospedal., Roma, 1915, V, No. 11.

Mental disease in soldiers due to the terrors of modern war is quite common in all European armies. Lately the medical department of the Italian army has established a special hospital for the treatment of soldiers who have become demented in the present war.

**Annual Report Superintendent of Nurses and Principal of Johns Hopkins Training School.** E. M. Lawler, Johns Hopkins Nursing Alumnæ Magazine, 1915, XIV, No. 3.

The splendid growth of the hospital and training school and its ever-increasing responsibilities are vividly revealed in the report. The nursing staff in 1891 consisted of 57; in 1910 it had increased to 142, and today, not including the 84 special nurses, the staff numbers 272. The class of 1915 was the largest in the history of the school.

**A Depilatory for Preparing the Scalp and Other Area for Operations at the Front.** Alexander Don, The Lancet, London, 1915, II, No. 7.

The depilatory recommended is a mixture of sod. sulphide, cold water, starch and fine unslaked lime, mixed to the consistency of a thick soap. This is rubbed into the whole scalp (after it has been washed and the hair cut with a clipper) and allowed to remain for about ten minutes. The whole can then be taken off with the back of a spatula, leaving the scalp quite bare and with no cuts.

**The Visiting Nurse in America—"Queen's Nurse."** The Nursing Times, London, 1915, XI, No. 536.

The trend toward municipal control is quite evident in the mind of this "Queen's Nurse" from the following:

"The hour has not yet come, but is not far in the future, when this will be the universal plan, when the city will no more be without its nurse than without its teachers. And when the hour comes we will warmly welcome it, for it will lift our work entirely out of the ranks of charity, and set it where it belongs as public service, available to those of high and low degree alike, as the public school is now. This may sound Utopian, but those who read the signs of the times say that it is surely coming."

**British Ambulance Unit for Italy.** The Lancet, London, 1915, II, No. 8.

The British ambulance unit for Italy consists of 20 ambulances (16 given by the Red Cross and 4 by the Society of Friends), 2 lorries and 3 runabout cars. Mr. George Trevelyan, the historian of Garibaldi, is the commandant and Mr. Philip J. Baker, formerly commandant of the Friends' Ambulance Unit, is the adjutant. Dr. G. Sanderson Brock, physician to the British embassy at Rome, is the consulting physician and Dr. W. Radford Daken the consulting surgeon. The unit has a personnel of fifty-five.

**Isolation Hospitals for Tuberculous Patients** (Gli ospedali di isolamento per i tubercolosi). Ospedale Maggiore, Milano, 1915, III, No. 6.

In 1897 the Italian government passed an ordinance that patients with pulmonary tuberculosis should be set apart in special isolation divisions in all hospitals. But the results were not as expected. In many hospitals the order was not at all or improperly carried out. At present of 104 of the larger cities seventy-eight isolate patients with pulmonary tuberculosis; twenty-two provide for no isolation, one isolates only the male patients and four refuse to receive phthisics entirely. Thirteen of the larger cities possess special tuberculosis hospitals, and in twelve others such institutions are under construction. Isolation in Italian hospitals is still a problem awaiting general application.

**The Working Expenses of a Mountain Sanatorium** (Il costo di esericizio d'un sanatorio di montagna). Dr. F. Gatti. Ospedale Maggiore, Milano, 1915, III, No. 6.

The author compares the daily expenses per patient in the People's Sanatorium for the Tuberculous at Prasomaso with those of similar institutions in other countries. At the sanatorium of Prasomaso the daily expenses per patient amount to £0.6.17 ($1.03), of which 49 percent is spent for nutrition. In Germany the average expense is £0.5.09 (40.32 percent for nutrition); in Switzerland £0.3.61 (53.66 percent for nutrition); in France £0.4.22 (37.70 percent for nutrition); in Belgium £0.4.33 (43.38 percent for nutrition); in Denmark £0.5.87 (32.6 percent for nutrition); in Sweden £0.4.62 (35.6 percent for nutrition); in England £0.5.97 (48.74 percent for nutrition).

**The Hospital of the City of Bergedorf** (Das Krankenhaus der Stadt Bergedorf). Ing. Ruppel, Zeitschr. f. Krankenanstalten, Leipzig, 1915, XI, No. 21.

During the last few years many of the smaller towns of Germany have followed the example of the large cities and have replaced their old hospitals by new buildings which are in conformity with the principles of modern hygiene. A new hospital has lately been erected by the town of Bergedorf, near Hamburg, which has a population of about 7,000 inhabitants. The U-shaped building consists of a basement, two stories and an attic. There is room for 60 patients. The basement contains the kitchen, storerooms, the central low-pressure steam heating plant and a dining room for the servants. In the first and second stories are the sick rooms, the operation room, and rooms for the nurses. The largest sick rooms contain six, the smaller ones from one to two beds. A division for infectious diseases (10 beds) has been set apart in the main building. It is intended, however, to erect later on a special pavilion for infectious diseases. The building has a very handsome and substantial appearance, and, though all unnecessary expense has been avoided, the most advanced principles of modern hygiene have been carried out in all parts of the structure. The erection of the building cost 346,000 marks ($86,500) and the interior furnishings 96,000 marks ($24,000). The total cost per bed amounts to 7,380 marks ($1,845). The article is accompanied by 3 plans and 15 illustrations.

**Operation of Massachusetts' Laws for Hospital Observation in Cases of Alleged Medical Disease and Defect.** Henry R. Stedman, Jour. A. M. A., 1915, LXV, No. 7.

Dr. Stedman bases the following conclusions on an experience of ten years with "Hospital Observation" in Massachusetts:

1. Hospital observation is a measure of proved value in doubtful cases of mental disease and defect in both criminals and non-criminals, and is growing in favor.
2. It affords opportunity for constant observation and

ample time for thorough examination under the best conditions by trained hospital psychiatrists.

3. It is of especial value in capital cases, in cases with concealed delusions and in the detection of malingerers.

4. It tends to make less frequent the plea of insanity as a defense for crime, and to lessen disrespect for expert medical opinion.

5. In many non-criminal cases it saves persons from hasty and ill-considered commitment as insane.

6. There appears to be every reason why the forty-three states which are without this valuable provision should adopt it, particularly as it has been long in successful operation in some form in six states and in Germany, and has the endorsement of our foremost jurists and alienists.

**The Saint Lazarus Hospital in Santiago, Galicia** (El hospital de San Lazaro, Galicia). Dr. D. Pimentel. España medica, Madrid, 1915, No. 150.

This leper hospital, situated near the capital of the Spanish province of Galicia, was founded in the twelfth century. The original hospital consisted of a number of modest cabins, where the lepers of the province were gathered to prevent the spread of this terrible disease. It was not until 1878 that a large, substantial building was erected, in which more modern views of a leper hospital were realized. It is especially due to the untiring efforts of Dr. Del Rio that the new institution owes its existence. This noble philanthropist devoted his whole life to the care of the poor lepers and to the study of this much dreaded disease. The hospital grounds comprise 4,000 meters square. Through numerous donations of charitable people it was possible to make many improvements in the interior of the hospital. The usual number of patients is about sixty. Dr. Del Rio is the director of the institution. He is assisted by two assistant physicians, four Sisters of Charity and a few male nurses. A chaplain provides for the religious needs of the patients.

**The Hospital of the Knights of Malta at Valletta.** The Nursing Times, 1915, XI, No. 537.

The most interesting transformation resulting from the ever-increasing demand in Europe for more bed capacity for the wounded is the conversion of this relic of the past into a modern hospital. The old military hospital of Valletta was built by the Knights of Malta in the year 1575. The Knights of Malta were the Knights of St. John of Jerusalem, originally a hospital order, writes the correspondent for the London Nursing Times. The long ward, 503 feet long, 34 feet 10 inches wide and 30 feet 6 inches high, with a capacity of 100 beds, was the original hospital. It was hung with valuable tapestries, and all utensils were of solid silver. These utensils were melted down during the siege a century ago, in order to pay the French soldiers. Underneath the long ward, the vaulted chamber of the same size, once the ward for the men-at-arms, now serves as a store room; while still deeper in the rock a third chamber, where galley-slaves were treated, is vaguely referred to as the dungeons, and we are reminded of the fact that at one time the submarine cable ran through it.

**Mental and Physical Survey of Supposedly Normal Children.** Langley Porter, M. D., A. Huffaker, M. D., and A. Ritter, Ph. D. Jour. of A. M. A., 1915, LXV, No. 8.

A special clinic was established in August, 1913, at Leland Stanford Junior University, Department of Pediatrics, for the older children under the Children's Agency of the Associated Charities, who are boarded in foster homes. The clinic is held every Friday afternoon and each child is given a thorough physical examination, a Binet mental and a Healy psychological test. The blood is taken for a Wassermann test and a von Pirquet reaction is made.

One hundred and ninety-five children over two and a half years of age have been examined since August, 1913. Dental attention was needed in 55 percent of this group, while 53 percent had diseased or hypertrophied tonsils. Eight were referred to the eye clinic, seven to the ear clinic and nine to the skin clinic. Fifteen were found to be tuberculous and twelve presented what English observers have denominated the pre-tuberculous state. Four children have had positive Wassermann reactions.

The records of the von Pirquet tests are not complete, but report is made of 119 psychologic examinations, classifying the children as 66.5 percent normal, 23 percent retarded, 7 percent borderline, 3 percent morons and 0.8 percent imbeciles.

**Installation and Working of the Prophylactic Service of the Auxiliary Hospital No. 36 at Breuil-le-Sec.** (Installation et fonctionnement du service de prophylaxie de l'hôpital complémentaire No. 36 de Breuil-le-Sec.). Revue d'hygiène, Paris, 1915, XXXVII, No. 4.

This military hospital was established last November by Dr. Viry. A furniture factory consisting of two large one-story buildings, one 900, the other 240 meters square, was converted into a hospital. The larger building was, by partitions, divided into three large halls and has room for 150 patients. The smaller building contains 50 beds. Smaller rooms were set apart for the nurses, servants, pharmacy, etc. The buildings were also provided with an electric light and a central steam heating plant. All the nurses of the hospital and a large number of the town people were vaccinated against typhoid fever and smallpox. To isolate patients with typhoid or other infectious diseases, a number of boxes, 2.7 meters wide, 4.8 meters long and 2.2 meters high were built along the side walls. The front of these boxes was provided with a large window. To secure stricter isolation a board wall 1.5 meters high was built in front of the boxes, leaving an alley 1.2 meters wide between it and the boxes. As a further precautionary measure against the spread of typhoid fever only soldiers who have just recovered from the disease are employed as nurses.

**The Importance of Immunizing Nurses and Hospital Attaches Against Typhoid Fever.** Elmer H. Funk, M. D. N. Y. Med. Journal, 1915, CII, No. 10.

The prophylactic inoculation of all nurses in training at Jefferson Hospital, Philadelphia, was made compulsory in July, 1912. Only one doubtful case has occurred during the last three years, and the writer believes that the fall in morbidity from 1.7 percent, the average for the fifteen years prior to 1912, to 0.3 percent is largely the result of protective inoculation.

Joslin and Overlander are cited as having found the incidence of typhoid among nurses in six hospitals in Massachusetts during a period of five years (1902 to 1906, inclusive), 1.6 percent; Spooner, in an investigation carried out at the Massachusetts General Hospital in 1909, found an incidence of 1.4 during the preceding ten years.

A questionnaire recently addressed to a number of large hospitals in ten large cities to ascertain how widely prophylactic inoculation was practiced in representative institutions elicited replies from seventy-six. Two of them were unsatisfactory; 50 institutions were practicing antityphoid inoculation; in 18 its administration was compulsory or strongly urged, in 32 voluntary, and 24 hospitals were not immunizing their nurses.

Nurses and hospital attendants form a group particularly exposed to infection, and inasmuch as instruction in the application of sanitary means alone has not resulted in a distinct reduction in the incidence of typhoid among them, a combination of sanitary measures with prophylactic inoculation is urged as a means to results not hitherto attained.

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*Army Medical Museum and Library, Office of the Surgeon-General, United States Army.*

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# DEPARTMENT OF NURSING

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### Nurses Give War Funds

In the month of April the Massachusetts State Nurses' Association heard an appeal for assistance from Madame Marie Depage, representative in the United States of the Executive Committee appointed by the King of Belgium for Belgian Red Cross Hospitals.

The appeal came through a lecture given by Madame Depage at the home of Dr. Mixter, in Boston, which was attended by a large number of nurses whose sympathies were deeply stirred, and who determined to bring the matter to the attention of the Massachusetts State Nurses' Association. She said in part:

"We all know what America has done and is doing every day for Belgium, especially for non-combatants. Words fail to express our gratitude for your overwhelming generosity; but though you perhaps have done more than you were expected to do, we must once more ask you for help in a case of urgent and unmistakable necessity.

"The big conflict of the present war is still in the future; the most terrific fighting of all will come this spring. We must foresee the coming slaughter, and be prepared to render instant aid to the thousands of wounded, friends and foes, who will fall within our lines.

"When we shall follow the army in our devastated land, we shall find *nothing*. It is stripped bare, and often we shall not find a roof to shelter the wounded soldiers. We must, therefore, have ready in store a number of field hospitals with every supply, including beds, linen, food, instruments, sterilizers, ambulances, and even tents. We must also have a large sum of money at our disposal for expenses such as fuel and emergencies.

"I have myself seen in Turkey, during the Balkan war, what it means not to have proper field hospitals, and fully appreciate the sacrifice of life and limb from lack of early care. Perhaps I have been chosen for this mission because I know how inhuman we should be if we were not ready for the men who will pay for our liberty with their blood."

The appeal was endorsed by such eminent men and women as J. Collins Warren, M. D., George H. Monks, M. D., S. J. Mixter, M. D., Miss Boardman, Acting Chairman of the American Red Cross, and other noted Americans.

The Massachusetts State Nurses' Association has many times proved its sympathy with and ability to help its stricken fellowmen, and believed another request would not prove an exception by being unheeded.

It therefore issued an appeal to its members, as nurses "who stay at home," urging them to do something to help this people who propose to care not only for their own sick and wounded, but also for their enemies who fall within their lines.

The plan proposed was as follows: that every training school for nurses, every registry of nurses, every nurses' alumnæ association, and every other organization for nurses should collect what it could and forward it to the state counsellor from whom the appeal came to them. The counsellor should turn it over to the large committee formed for the purpose by the Massachusetts State Nurses' Association, and it should go thence to the local treasurer, Dr. S. J. Mixter, Boston.

At first consideration the committee was inclined to ask a stated sum from each and every nurse, but upon consideration it seemed wiser not to solicit a specified amount, but to be very grateful indeed for whatever anyone could spare.

It was stated that
$30.00 will pay for one bed.
$200.00 will pay for one bed and its upkeep.
$1,000.00 will pay for a ward.
$20,000.00 will pay for a whole hospital.

It was the ambition of the Association to pay for a ward, which would be assured by the reception of an average of only twenty-five cents from each nurse, and it is justified in feeling great pride and satisfaction in the following contributions made by counties to this fund:

CASH COLLECTED FOR AMERICAN BELGIAN HOSPITAL

| | |
|---|---|
| Berkshire county | $ 35.00 |
| Franklin county | 8.00 |
| Hampden county | 36.75 |
| Worcester county | 264.81 |
| Essex county | 106.00 |
| Middlesex county | 112.80 |
| Suffolk county | 250.60 |
| Bristol county | 159.00 |
| Norfolk county | 16.54 |
| Boston School Nurses | 9.25 |
| Interest | 1.48 |
| | $1,000.23 |

Thus it will be seen that the sum contributed was sufficient to pay for a ward, and while the nurses rejoice that their efforts were crowned with success and they were able to accomplish that for which they hardly dared hope, their joy in achievement is tinged with grief at the loss of the noble woman who inspired them, for it will be remembered that Madame Depage was lost to the world with the ill-fated Lusitania.

### Honor to Whom Honor Is Due

The public press and the scientific press have been replete with praise of the work done by medical experts in excluding disease and in promoting hygienic conditions in the war-ridden districts of Europe.

All people, whether possessed of humanitarian instincts or not, must glow with pride in contemplation of what has been accomplished in Serbia alone by the scientific men directing the work of the American Red Cross and Rockefeller Foundation in stamping out typhus fever.

The laity must glory in the principles which prompted these men to risk their lives that others might live, and it must mourn the loss of those who proved victims of the great plague. We are taught that "Greater love hath no man than this—that he lay down his life for another." But what about the nurse who stood by his side and succumbed also? What is written or said about those who have returned broken in health and unfit for any place in life save that furnished by the care of friends and relatives, or possibly of some philanthropic body?

Would it detract one whit from the achievements of the great scientists if the nurse's efforts were given their meed of recognition?

Possibly she has no one to speak for her. It may be true that she has gone along so quietly and efficiently with her work that she is noted only by her absence, or it may

be that with characteristic modesty she has fulfilled her tasks in her best manner without thought of notice, being content with the opportunity to work and the results attained.

Any of these suggested possibilities are sufficient from her point of view, but do they exonerate others for their negligence in disregarding her part in the great accomplishment?

Another phase of the question persists in obtruding itself upon the mind of the thoughtful onlooker, viz.: What effect will this and similar instances have upon the future supply and character of the great nursing body? Would it not be a matter of simple expediency that the nurse should receive due recognition?

Everybody admits that the sick public requires the best nursing care it can secure. Will its chances for securing it be enhanced by such neglect? Will the opportunity for criticism of the qualities of the trained nurse be lessened by such neglect?

Will the inflow of the *best* young women to our training schools be increased by such neglect?

Will the spirits of those having in charge the training and output of nurses be encouraged by such neglect?

"Think on these things!"

## ORGANIZING OHIO NURSING

### Dr. Matson Tells of the Many Difficulties Encountered in Setting the Law to Work

During the recent conference, at Cedar Point, that led up to the formation of the Ohio Hospital Association, as described by Mr. Sheridan, of the Ohio *Medical Journal*, on another page of this issue, Dr. George H. Matson, secretary of the Ohio State Medical Board, gave a most interesting address on the difficulties the board is encountering in its attempts to enforce the nursing registration law passed by the last legislature. Ohio never had a nurse registration law before.

At the request of the editor of THE MODERN HOSPITAL, Dr. Matson kindly consented to write a short letter summarizing the points made in his talk to the hospital people. The letter, which is self-explanatory, is here reproduced:

To the Editor of THE MODERN HOSPITAL:

You have asked me to write you concerning our recently enacted nurse registration act and to relate some of our experiences incident to its enforcement.

Under the law the State Medical Board is charged with enforcement, and authorized to appoint three nurses from a list of ten recommended by the State Association of Graduate Nurses, who with the secretary of the State Medical Board shall constitute the Nurses' Examining Committee; the secretary of the board to be the secretary and executive officer of the committee and one nurse to be designated as chief examiner.

As in the case of nearly all other state laws governing nursing, only graduates of training schools and hospitals recognized by the board are eligible for registration. Those now in training are exempt from examination and have until June 1, 1918, in which to be graduated and present their diplomas for licensure.

Certificates will permit the use of the term "Registered Nurse" and title "R. N.," and those not holding certificates are forbidden the use of this title.

The preliminary educational standard for those who may in the future apply for registration is fixed at four units credit, or that required for completion of the first year's work of a first grade high school of Ohio, to be determined by the entrance examiner of the State Medical Board in the same manner that credentials of those desiring to matriculate in a medical school are determined. Training schools not requiring at least an equivalent of this amount of preliminary education cannot under the law be recognized.

Minimum professional requirements are to be determined by the examining committee and the board and may from time to time be altered as conditions demand. The scope and character of the examinations are also to be determined by the committee and the board.

It will be seen, at once, that the first and most important question for the committee and the board to determine is, "What shall constitute a recognized training school and hospital?" or, "What is to be the minimum school requirement?"

We have in the state training schools giving two-year courses, which are said to be doing splendid work, and their graduates are in demand; we have others giving three-year courses whose graduates are not considered properly trained.

Some schools with small hospital facilities and few beds are furnishing more than the ordinary didactic teaching; others with modern facilities and many beds have too few students in the training school. Here we find an overabundance of practical training and not enough didactic teaching. Even if more didactic work were given the pupils are seldom in physical or mental condition to receive it properly. Most of the hospital authorities recognize these conditions and are ready now to correct them.

We have found since the law became operative (Aug. 1, 1915) that some schools as late as 1909 were giving a one-year course and granting diplomas; that hospital authorities during the past several years have been regranting diplomas to take the place of certificates of attendance given many years ago. In one case an entirely new diploma has been given to graduates of one institution. Some of these diplomas would indicate that a three-year course was completed in 1902, while others indicate a one-year course completed at the same time.

We have learned that the so-called three-year course consisted of three one-year courses, and that in some instances at least they might well have been called ten-year courses or twenty-year courses; for the individuals holding the new diplomas attended lectures for fully that many years.

Applications are coming in from graduates of defunct schools; in some instances the schools were connected with private hospitals, and the former officers are dead, have moved away, or are hard to locate.

Graduates from schools not recognized by the examining board of the states in which they are located have no hesitancy in asking registration.

Many inquiries are coming in from those who received training at a one-man hospital; that is, all the lectures seem to have been given by one physician, and no organization or faculty is or was in evidence.

In many instances of applications from those who received training at the larger schools, no definite information can be given as to the time devoted to the various services. We are advised that the requirements in this respect are not uniform; some student nurses who show aptitude are kept in the operating room for longer periods than others, or in the surgical ward for so long a period that other branches or departments are neglected.

Our chief trouble just now is in the administration of the preliminary requirements. The law provides that after May 1, 1915, all those entering upon the study of nursing shall show documentary evidence of having completed the first year's work of a four-year high school of the first grade of this state. The law did not become operative until August 1, 1915, and many training schools of the state had agreed to admit certain students on September 1, 1915, and others September 15, 1915. Neither the schools nor the students were informed concerning the law and of course both were acting in good faith. We must not be charged with administering a retroactive measure and hence occasioning the need of shifting.

A surgeon who for several years conducted a training school in connection with a small hospital ceased training nurses some three or four years ago, but now wants to know whether his graduates may be registered. There were three student nurses, one of whom acted as night nurse, and a head nurse who did all the teaching. It is not certain about the didactic work given. Certainly a school now giving such a course, if this may be so considered, could not hope for recognition. But the question is, should we, to establish registration, recognize such work and register those who served their time in good faith and graduated?

Here is another nut to crack! A nurse, whose parents live in Wisconsin but who graduated in Cincinnati, has written us from Wisconsin that she expects to practice

her calling in Ohio. The law contemplates the registration of resident nurses under the exemption provisions. The question arises whether this applicant should be advised to return to Ohio before January 1, 1916, the date when the exemption provision ends, to establish her residence in Ohio, or should we register her on the theory that she graduated in Ohio? Of course we have our answer to such problems, but there seem to be two sides to the question. If we should register her, for instance, then why not register an applicant who graduated, say, at the Presbyterian Hospital in Chicago and desires to practice in Ohio?

Another important question for the nurses' examining committee and the board to decide is, just what should constitute a recognized training school in 1900, or 1905, or 1910, up to the present time? Of course the minimum educational standards to be adopted by the committee will decide for the future.

Probably this letter is already too long, but if we should have any serious future troubles we should be glad to write you again. GEORGE H. MATSON, M. D.,
Secretary.

## The Social Life of Student Nurses[1]

BY MARY M. RIDDLE.

With this country's great increase in the number of pupil nurses incident to the multiplication of hospitals and the larger demand upon the hospitals for the care of their patients as well as the additional opportunities for nurses in the world outside, came the weighty impression that new paths must be blazed and new trails laid out for the future. The future is indeed full of demands and of promise to the well-disciplined and well-equipped young nurse fortunate enough to have had her education in the times under the auspices so favorable for her success.

It followed as a natural sequence that as the schools demanded pupil nurses in greater numbers they were obliged to admit them at earlier age than hitherto, or be willing to accept the older women who have been out of school a long time and who doubtless have tried some other occupation and possibly failed or grown *passe* in it, and who are now turning to the profession of nursing as a safe harbor for their abilities and activities.

The younger women are the newly graduated school or college girls, many of whom are assuming responsibilities for the first time in their lives, and these responsibilities are of a kind to wear heavily upon them. They must, therefore, not only be taught how to meet the cares of their newly chosen hospital work, but they must be carefully supervised regarding their own health and pleasures. Some of them, and these are often among the worthier and more useful ones, must even be taught how to take their places in the great world outside of schools and hospitals.

These conditions have caused the superintendent of the average school much concern. She has weighed the matter in her own mind for a long time and has drawn her conclusions and acted according to the requirements of her special school and her means of meeting them.

After much deliberation, one superintendent of a training school determined to present the necessities to her board of trustees. As they were wise men, their perception of the whole situation was clear, and their belief in the feasibility of a scheme for bettering conditions was at once expressed.

Her plea to them ran something like this: "We have many *young* nurses (some not over twenty years of age) who have come from good homes, perhaps in the country; most of them are high school graduates, some are college bred, but very many have no particular point of view. They are sent to duty in the wards, and they go and come faithfully, but when they are off duty they choose their associates, sometimes with little discretion; or else they mope and dull their wits and sensibilities by so doing. They go out without advice, they come in without comment from any one and without exciting the interest of any one unless perchance they are later than the prescribed hour.

"The nurses' school should have at the head of its home a young woman, preferably one who is not a nurse, but who is well educated, alert, quick, bright and in sympathy with younger women and their interests. In short, she must be a woman of high ideals and one whom the nurses will delight to follow. She should direct their pleasures and guide them in hygienic ways for their health's sake; she should direct them to places of interest when off duty, and if need be, chaperone them; she should see that they are provided with suitable and interesting reading and recreation in their home; she should teach them how to meet people in a social as well as a business way; she must keep them in touch with the world outside of the nursing life, and she should be at all times one of their most valued friends.

"Gentlemen, the need is great. Does this appeal to you?"

"It does," was the reply, "but the hospital's finances are limited. How shall we meet this new demand upon our treasury?"

That superintendent was not a financier and could not answer, but upon the board were those of wide vision and broad minds, who delight in solving intricate problems as well as in doing good. One of these members arose and said, "I will finance this scheme for one year if the hospital will signify its willingness to take it over at the end of that time provided it is a success and we have proved its usefulness to our particular school."

This was the sanction needed, the plans seemed destined to be immediately realized and the next step was taken which was to secure the proper young woman to bring about the desired results. For the want of a better title she was called the Physical and Social Director of the Training School. The superintendent had no particular directions to give, she could only state what she wished to accomplish.

The young woman who undertook to initiate the work proved exceptional. She was a graduate of a college and had five or six years' experience as teacher in a private high school, where she directed all the girls' activities. She had no precedents from which to take a cue and she had no prejudices to overcome. During the first year she kept constantly before her the goal, and with eyes fixed upon it she started the work, having been given unusual freedom for it and support in inaugurating it.

Her very first act was that of making the home attractive by placing flowers about in unusual places and thus exciting the attention of the nurses. So successful did this prove that she continued it until every plant and shrub in the garden was covered with snow and she was obliged to fill her vases with pine branches from the nearby woods and boughs from the cedar trees, but she understood her young women and they were impressed.

She overhauled the library and by means of a new arrangement of the books upon the shelves and a new catalogue she directed attention to them, and then by her own knowledge of them and the very interesting manner in which she imparted it, her young women were won from another standpoint and of their own volition patronized the reference library as never before.

As the home library was rather meager, she conceived the idea of increasing it by cooperating with the public library in the city. Because of the interest of the hospital

[1] Paper read at the Annual Convention of the National League of Nursing Education, San Francisco, June 22, 1915.

trustees in the school and because some of the same men were trustees of the public library, she had the nurses' home made a sub-station of the library, which now delivers one hundred new books each month to the home and removes the number left there the previous month.

A well lighted and comfortably arranged reading room with current newspapers and periodicals was established and proved a Mecca to the tired nurse on her return from the arduous work of the ward.

A vesper hour for day nurses and a twenty-minute song service for the night nurses was held every Sunday evening.

A few theater parties and visits to places of interest were made, but much more dependence was placed upon resources in the home and what could be brought in.

Leaders in many lines of the world's work were welcomed to the home and every one was generous in responding to a request for a talk about his or her special activity.

Many came to entertain the school in the happiest manner. Cooperation between the training school and other institutions of the city, such as schools and churches, was started and continues to grow with benefit to all by proving mutually educational.

A student branch of the Young Women's Christian Association was organized and accepted by the national organization. For this the nurses elect their officers each year and carry on its business according to the rules laid down by the national body. They also elect two of their members as delegates to the Y. W. C. A. student conference held annually. The school pays all expenses of these delegates and must earn money to do so. The superintendent of the training school stipulates that nurses acting as delegates must be willing to consider the time thus spent a part of their vacations.

The clergymen of the local churches, officers of the Y. W. C. A. in the neighboring city, and nearby schools, colleges, members of mission boards, settlement workers and active Christian men and women of many professions, have graciously addressed the Sunday evening meetings and made of them a pleasure but never a duty in the thought of the nurses.

These meetings are supervised and partly arranged by the physical and social director, who knows that the music committee is doing its duty and that provision has been made for each part of the service. She then puts the service into the hands of the officers of the Y. W. C. A., for it is considered good discipline for the nurses to conduct it and to subject themselves to commendation or criticism as the case may be. The meetings are always attended by the officers of the school and not infrequently by members of the training school committee or trustees.

The members and friends of the school felt that a long step forward had been taken when they were able to assemble the graduating class and pupils of the school in the recreation hall for the baccalaureate sermon, which was delivered on the Sunday evening preceding the date of graduation. The participants took such a degree of pleasure and satisfaction in this event as they have seldom experienced in hospital work, not only on account of its immediate results, which were uplifting, but also because it marked a general advancement of standards.

Outdoor sports form an important feature in this scheme, and every inducement to a healthy outdoor life was offered in tennis, basket ball, archery, a skating rink and a toboggan slide. Almost every other exercise is optional with the nurse, and pains are taken to entice her out of doors; but should she prove unwilling to go for pleasure she is shown her duty and told that she must spend a certain amount of time in the open air each day, though she need not necessarily participate in the games and amusements furnished.

Particular attention was paid to the outdoor exercise of the night nurses, as they are apparently a little less inclined to make the effort.

Longer and shorter walks in the country were taken and they sent the nurses back to their patients renewed in body and spirit.

Tennis tournaments were held and friendly class rivalry ran high.

A club for each class met twice a month from October to April, for amusement or education. The seniors called theirs the Current Events Club and arranged their programme at every meeting in accordance with their title, and they almost always added a short story. The stories were by standard authors and their selection must have cost some one considerable thought. The club meetings were scheduled for the evening of the day when the pupils had their hardest class work of the week. One of their number was appointed to lead in the recitation of current events and one to read the short story, while the others sat about with their sewing or other hand work and listened.

The Juniors called their club the Book-Lovers' Club and carried it on very much like the one already described. The first-year nurses chose to study the art and history of dancing. Folk dancing was much appreciated as well as the social dances and the occasional dancing party.

An hour in breathing exercises and tone production was given once a week in each class for general culture of the speaking voice.

Besides the clubs and classes the school was entertained fortnightly by one of the classes in some simple way, the hostesses for the occasion being chosen by the class. These entertainments were thought to be most beneficial, because the hostesses were put on their mettle to entertain in a pleasing and acceptable manner at little or no cost.

Thus are outlined the activities for the first year under the physical and social director. This account does not by any means give an adequate idea of all that was accomplished, but it states the purposes and plans, and shows their success when practically applied. The results of these activities were especially seen in a better school spirit and a loyalty that amounted to inspiration.

Instead of the school family being merely a working organization it became one united in its pleasures and enterprises as well, with a unity almost equal to that of a family. Nurses became better acquainted and found and gave sympathy.

Instead of having to be urged to take exercise in the open air, the nurses looked forward to it and soon forgot the slight inconvenience of changing a costume for the purpose. The increase in outdoor exercise promoted the health of the school and therefore the happiness and efficiency of each nurse.

Hitherto the members of the school had found it necessary to leave the premises for pleasure and diversion, but with the new opportunities at home the desire for entertainment elsewhere seemed to lessen and permission for absence after the prescribed hour was less frequently requested.

There can be no doubt of the usefulness of this kind of work in our nurses' schools for the cultivation of the qualities of the nurse which have heretofore been allowed to lie dormant. These qualities add much to her value if cultivated, whereas the absence of these qualities at least retards her progress and may bring criticism and even contumely upon the whole profession.

Who among the officers of our schools cannot recall instances of woful ignorance of the ordinary social observances in the households of well-to-do families? A young nurse launched into one of these homes is often so overcome and awed by what seems to her great splendor that she is unfitted for her nursing tasks. She has never seen some of the forms and ceremonies commonly observed. At home candles were long ago relegated to the attic, and she is perhaps surprised to find them upon the dining table of the patient's family. She goes with the family to the library for the after-dinner coffee and forgets her patient until reminded by some member of the family that now perhaps her patient may require her care.

The personal experience the nurse gains in acting as hostess to the school at a little party does much toward enabling her to gain the poise so necessary to qualify her for after occasions when she comes in contact with conditions of the same character on a larger scale. There should be no criticism of her because she does not know all the minor customs, for many of them are not altogether worth knowing; but criticism may rightly come when she cannot maintain herself in their midst.

Again, it is a subject of remark that the nurse is too often ignorant of common characters in history or even in her profession. She may be forgiven for not knowing George Washington or Abraham Lincoln, but how can ignorance of Florence Nightingale or Mrs. Robb or Linda Richards be overlooked? Equally vague are the notions about more recent affairs in her own profession. She may know about a district nursing association, but she has not yet come into knowledge of the great body of public health nurses; she may know something of the various state associations for nurses, and she may belong to the one in her own state, but she has associated it always with the question of registration, and she reasons that now since state registration is secured the function of the association should cease; and when asked to become a member of her alumnæ association, she may reply, upon having it explained to her, "I do not see much in it for me."

These are all straws, but they show that the wind stirring them comes from the arid desert of ignorance and narrow-mindedness, and confirms with renewed strength the principle that our pupils must have a foundation of good breeding and fair education.

Busy nurse teachers may teach and almost drill their pupils in the subject of ethics and etiquette, but when the instruction comes from an outsider, with that outsider's point of view and knowledge, the impression received is doubled in force and longevity.

Moreover, many of our best training school superintendents have been long in the service and have rather lost the impulse they once obtained from sharp competition in the world outside; hence this new and, one might almost say, alien spirit, stimulates every other kind of activity in the school.

Arguments almost innumerable might be cited for the necessity of such care and instruction, but let it be assumed that they have all been satisfactorily answered and let the attention be directed toward securing the proper young woman for this leader and instructor.

She had better not be a nurse, because even if she were well fitted otherwise, it would be very hard for her to get away from the viewpoint and tendencies of the nursing side of the question, whereas if she is unacquainted with that form of work in the school she will make no concessions to it in the outline and general management of her instruction.

As has before been said, she must be a woman of ideals and one whom the nurses will gladly follow, for no matter what her qualities may be she must have that within her which they consider worthy of emulation or she cannot exercise the magnetism necessary to insure success.

She must be a woman of education, and she will do better if she has had experience in association with young people and be willing to consider them her associates and comrades. To that end she will doubtless plan her absence from the home for the time when they also are absent on duty and be there when they are off duty and require her presence.

She will have many discouragements; the nurses will not in the beginning look upon her advances with favor, but will consider her activity as a demand for more of their time and energy. If she is wise she will proceed slowly from one point to another in the establishment of clubs and other interests.

The irregularities of the nurses will have a tendency to discourage the director herself. It will seem hard to have her plans interfered with by changes of nurses, by new assignments, in short, by the fact, often reiterated, that they are here today and elsewhere tomorrow; but her very discouragements may prove a benefit to them in that it draws attention to irregularities and changes which need not always be, but which may often be eliminated by a little more care and thoughtfulness on the part of the management.

She will discover many inequalities in the people, proving them to be not of one class or grade, even though nominally in the same class in the school. Such discoveries may wound the pride of the management, but they react to the advantage of all. The failure of the whole scheme is assured unless she can be given great scope for the work.

The superintendent of the school must recognize the fact that the physical and social director must be allowed to work according to her own programme—that she must be given time for it and the opportunity for doing it in her own way.

The superintendent may keep her finger upon the pulse of proceedings, and it should be her privilege to demand results, but she must be willing to delegate her authority to one who must, necessarily, be a vital influence in her school, remembering that her own influence ought not to exist merely by reason of her position, but by her inherent qualities as well.

Naturally, there will arise great differences of opinion, which usually result in mutual stimulation and have a good effect.

The whole work is large and complex and demands the surrender of many positions heretofore taken by the superintendent; it demands the cooperation of the nurses themselves; and it demands the assumption of new duties, new positions and new responsibilities by the physical and social director; but the single desire should be to give each individual nurse health and joy in her present duties, with a sense of security in her preparedness for the future.

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Mr. Frank E. Chapman, for the last two years superintendent of the St. Louis City Hospital, has tendered his resignation to become effective October 20. Mr. Chapman has accepted the superintendency of the new Cleveland Jewish Hospital, Cleveland, Ohio, which, when completed, in the near future, will represent an expenditure of $500,000. It is understood that the Cleveland appointment carries with it a more attractive salary than that of the St. Louis position Mr. Chapman will vacate. The relations between the outgoing superintendent and the St. Louis city authorities are said to be quite cordial and harmonious. Mr. Chapman is only 33 years of age. He was formerly connected with the Frisco Employees' Hospital in St. Louis.

# FOREIGN CORRESPONDENCE

## Military Hospital Arrangements in Great Britain[1]

PART II

Immediately after the declaration of war the Board of Governors of the London Hospital placed 500 beds at the disposal of the military and naval medical authorities, 250 for each service. Early in September a message was received on a Sunday morning, asking that one hundred wounded might be accommodated that evening; and later in the day the hospital management was requested to undertake their transport from Waterloo station to the hospital in Whitechapel Road, a distance of about three miles. This

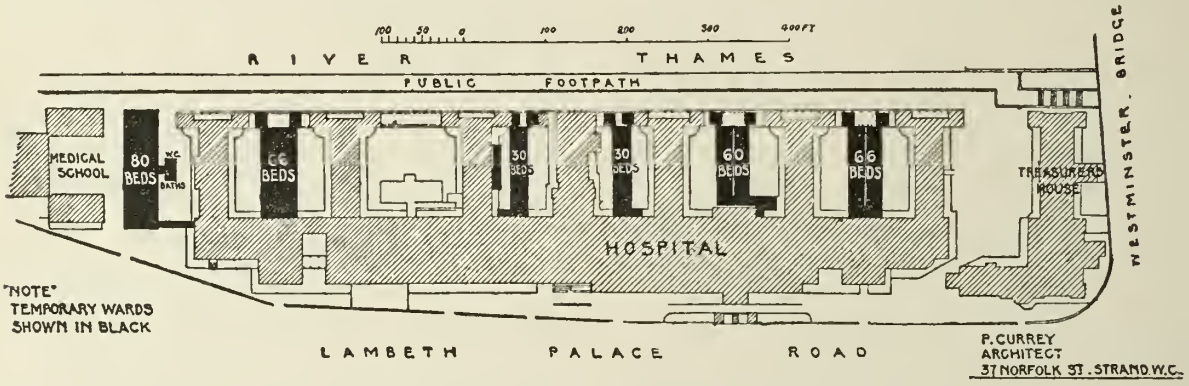


Fig. 1. St. Thomas's Hospital, London. Block plan showing temporary wards.

was done, and the men were soon comfortably settled in their beds. While they were being cared for a further request arrived from the War Office that another 200 might be received, and this second contingent was successfully transported and settled in bed early the following morning. The method of procedure that has been evolved is as follows: The number of beds available for soldiers is reported daily in the morning to the officer in charge, Queen Alexandra Military Hospital, Millbank, and the military authorities then notify the London Hospital (or other hospital concerned) of the number of new patients that may be expected to arrive that day, distinguishing the stretcher cases from those who can walk. Transport is provided by the military. Cards are used, of different colors for the different wards of the hospital, and on arrival each patient is transferred at once from the ambulance to the bed provided in the particular ward allotted for the treatment of the particular class of injury or disease. Beef tea or some other suitable refreshment is served immediately on arrival, and the patient's clothing immediately placed in a separate canvas bag, labeled with his name, number of the bed, etc., and taken away for sterilization and cleansing. In the earlier and colder part of the year the sheepskin coats that were worn harbored vermin and needed special care in disinfection, etc. Worn-out uniforms, boots, etc., are replaced as required. Complete lists of the names of arrivals are forwarded at once to the military medical authorities at the Millbank Hospital. While in the wards of the hospital the patients are entirely under the care of the civilian medical and surgical staff. When sufficiently recovered they are drafted to various convalescent homes in the country, and when ready for final discharge they are sent to the depots of their respective regiments, the hospital being authorized to issue the necessary railway passes. There seems to have been an entire absence of friction or "red tape" in the working of the transfer arrangements between civilian hospital authorities and the military officials concerned. Up to the beginning of June 2,688 wounded men had been treated, with only 30 deaths. The resident staff and the number of student dressers are reduced to a minimum, owing to the demand for medical men for active service in the field. The visiting staff have come to the assistance of the resident medical officers at very considerable personal sacrifice, and orderlies are under training for military duty, their services being useful for the work usually performed by dressers. An important item in hospital administration has been the very great increase in price of certain drugs: Epsom salts, for instance, is 50 percent dearer; aspirin has gone up from 2s to 27s per pound; carbolic acid, owing to its use in the manufacture of explosives, is only obtainable on special authority from the War Office.

Some valuable suggestions as to administrative hospital procedure in relation to war exigencies have been made by Lord Knutsford, whose long experience in hospital management has made him especially qualified to give advice on such matters. As Mr. Sydney Holland he was for many years the guiding spirit in the administration of the

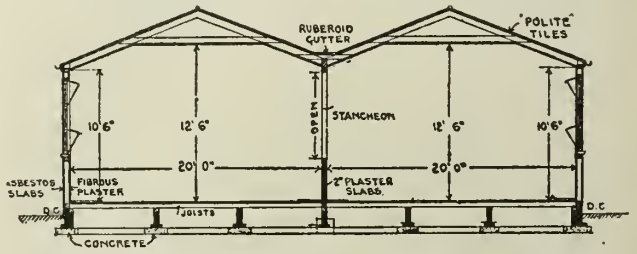


Fig. 2. St. Thomas's Hospital, London. Section through wards.

London Hospital, the largest in the metropolis. The principal points are that the cases of wounded should be classified, so that serious injuries may be sent to one set of hospitals and slight cases to another; that the hospitals for slighter cases should be staffed by nurses who have retired from active service, assisted by probationers and

[1]Part I was published in THE MODERN HOSPITAL of May, 1915.

Fig. 3. The First Eastern General Hospital, Cambridge, is composed of a number of open-air wards; they lack a wall on one side. Some wonderful cures have been effected by this method, and many thousands of wounded soldiers who have passed through the hospital have been returned to the fighting line, after being practically given up. The picture shows a group of wounded Tommies enjoying a game of bowls.

members of the Voluntary Aid detachments; and that all hospitals should have "relief hospitals" attached to them, to which convalescent or semi-convalescent patients may be drafted, so as to keep the wards themselves as free as possible for fresh serious cases. These suggestions seem to be admirable and worthy of application to the hospital situation all around.

The terms on which transfer of hospital accommodation to the War Office is arranged must necessarily vary in different cases. An example of a good and businesslike transactions in the arrangement made between the War Office and the Board of Control of the Cardiff Mental Hospital. The military authorities are responsible for the care and treatment of the patients and for the management of the hospital, which is handed over to them with the whole of its staff as a going concern, any additional staff required to be appointed by the War Office. As to emoluments, the existing scale is not to be interfered with; the existing staff is to remain in the employment of the visiting committee, the medical superintendent continuing to make contracts and carry on the business side of the administration, but opening a separate account and reporting monthly to the War Office through the Board of Control. At the London Poor Law Infirmaries that have been taken over, the existing medical superintendent has generally been given a temporary commission and appointed as officer in charge of the hospital. The Guardians continue to make contracts and supply the provisions, drugs and necessaries, and undertake any structural alterations that may be required. Any additional staff, other than medical, is obtained through the Guardians. The salaries and emoluments of the officers taken over remain unaffected.

At St. Thomas's Hospital the problem of providing additional accommodation for wounded soldiers has been solved by the erection of temporary hut wards in the spaces between the hospital blocks (see accompanying plan, Fig. 1). This hospital was removed from its original situation near London Bridge to its present position facing the Thames, on the Albert Embankment, in 1871, being the first hospital in London constructed on the pavilion system (now almost universal). As shown on the plan, there are seven ward blocks, between which are open spaces, so that the wards each receive light and air on three sides. In the interspaces have been erected six hut buildings, two containing 30 beds, two with 66 beds, one with 60 beds and one with 80 beds, thus providing accommodation for 332 wounded. It is of course not desirable, as a general rule, to encroach upon any open space adjoining hospital wards, but when necessity for additional accommodation is urgent it is much better to do this than to increase the number of beds in a ward, or to start a fresh hospital at a distance from the administrative machinery that already exists in working order. The cost amounted to about £34 per bed. The construction is of timber framing on brickwork foundations. The framework is covered externally with a composition of wood, Portland cement and asbestos, known as "Polite," and internally with fibrous plaster distempered. The roofs are of Polite slabs. All walls have damp-proof courses. The wards are heated by gas radiators and lighted by electricity. The total cost was approximately £10,000. The accompanying figures (1, 2) show the general arrangement of the construction. The wards open on balconies (overlooking the river, opposite the Houses of Parliament), where all patients that are fit enough spend the greater part of their time. It may be mentioned that as far back as last August two American ladies, anxious to be of substantial assistance to the hospital (which is by no means a wealthy institution), sent a donation of £5,000 as a contribution to the extra expenditure incurred by the managers on account of the war.

The King George Hospital, established in the large, new building just completed of the Stationery Office in Waterloo Road, was opened for patients at the end of May. There are five floors, each containing 324 beds, and pa-

Fig. 4. Wounded soldiers sunning themselves in one of the open-air wards, First Eastern General Hospital, Cambridge.

tients were immediately admitted at the rate of two hundred a day to the two upper floors. On each of the five floors is a completely equipped operating theater, and the kitchens are on the roof. When completed the building will accommodate 1,620 patients. A strong staff of consulting physicians and surgeons has been appointed for all departments. This hospital is a very large one, each of the floors measuring nearly an acre and a half, and there being nearly three miles of corridors. The medical cases are on the first floor, the surgical on the next three, and the kitchens on the top floor; there also are ten wards for slighter cases. There are ten lifts, many of them capable of taking lying-down cases. The wards vary in size from 3 up to 65 beds. The lighting is by electricity, there being about 3,500 lamps and about 55 miles of wire. On the flat roof is a large garden with 24 revolving shelters that can be used in all weathers. Special beds have been given by the King and Queen, the King and Queen of Portugal and Queen Amelie of Portugal. The Civil Service have given 14 beds, the theatrical profession 26 beds, the 3d Army Corps 20 beds; various trades have done likewise. The erection, fitting up and staffing of this hospital have been carried out on unusual lines. As already mentioned, the building was erected to provide accommodation for His Majesty's stationery office, which has long outgrown its present habitation in Westminster. At the beginning of the war it had just been completed as a building, but had not been equipped for its intended purpose. Its situation, within a few hundred yards of the Waterloo Station of the Southwestern Railway, where large numbers of wounded are continually arriving, marked it out as a desirable building for a hospital, and its conversion to this object was decided on. The British Red Cross Society and the Order of St. John of Jerusalem undertook to equip the wards, theaters, dispensaries, x-ray and other special departments; for the former Sir Frederick Treves, and for the latter Mr. Edmund Owen have been especially active in devising and carrying out the arrangements. These societies also provide and maintain the resident medical officers and nurses.

Addition to existing hospital accommodation by means of temporary buildings devoted to the treatment of the wounded has been carried out at various centers in the provinces. The arrangements as regards cost and staffing vary in different cases. At Nottingham the War Office and the managers of the General Hospital came to an arrangement in April last, which will doubtless be followed at many other places. An addition of 150 beds has been made to the capacity of the hospital by the erection of two buildings of weather-boarding externally, with an internal lining, each containing 75 beds. The War Office provided half the total cost of £3,000, the remainder being contributed by the generosity of two gentlemen of the locality. The War Office also provides the equipment. The additional beds have a cubic space per bed of about 800 cubic feet, each ward measuring about 150x33 feet by 10 feet up to the eaves. Heating is by steam pipes, lighting by electricity. One departure from ordinary hospital practice is to be noted in the fact that there are three rows of beds in each ward. This is, of course, not desirable in either surgical or medical wards, and the results of this departure from the principles of modern hospital construction will be awaited with interest. One must be prepared to revise one's opinions from time to time, however firmly based we may believe them to be, if extended experience points in an opposite direction, but the evidence must be convincing.

As another example of what is being done in the provision of accommodation for wounded, we may mention Manchester. Up to the beginning of June about 30,000 soldiers had been received as patients. A military hospital of 600 beds was opened in the early days of the war, soon afterwards supplemented by auxiliary establishments. Every medical institution in the city that could take in soldier patients has done so. Thus, at the Royal Infirmary 200 beds were allocated to them in October, and another hundred in May. The Earl of Ellesmere lent Worsley Hall, fitted up for 130 beds. More than twenty schools have been adapted as Voluntary Aid hospitals of varying capacities, some accommodating as many as 150 patients. The total number of beds available is more than 4,000.

A Retired Army Officer.

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Dr. H. J. Gahagan, superintendent of the Elgin (Ill.) State Hospital, is having a nine-hole golf course laid out at this institution for the use of patients. Dr. Gahagan believes the outdoor exercise and the competition of the game will have a very beneficial effect on the patients.

# PREVENTION OF TUBERCULOSIS

*Conducted under the auspices of*
THE NATIONAL ASSOCIATION FOR THE STUDY AND PREVENTION OF TUBERCULOSIS

## Tuberculosis Week

BY PHILIP P. JACOBS, PH. D.

Plans for a national Medical Examination Day, a Children's Health Crusade Day, and a Tuberculosis Sunday, all to be held in Tuberculosis Week, December 6 to 12, are announced by The National Association for the Study and Prevention of Tuberculosis.

Medical Examination Day is set for Wednesday, December 8. It will be the first effort on a national scale to urge an annual physical examination for everyone. Plans for the day include an appeal to induce everyone, sick or well, to see a doctor and learn whether they are in good physical condition. The scheme includes also the inauguration on the part of factories, stores and offices of an annual physical examination for all employees. Thousands of anti-tuberculosis associations, other societies, and dispensaries all over the country are expected to cooperate in furnishing free examinations for those not able to pay a physician.

Children's Health Crusade Day on Friday, December 10, is planned to interest and instruct school children in healthful living. Special exercises will be held at which lectures, essays and playlets will be given on the subject of health. This will also be the occasion for launching the Red Cross Christmas Seal sale in the schools.

The culmination of the campaign will be the sixth annual celebration of Tuberculosis Sunday. Last year on Tuberculosis Day over 100,000 churches gave attention to the subject of tuberculosis by sermons, talks and announcements. The governors of all the states will be asked to issue proclamations calling attention to the importance of increasing the knowledge of the public on how to avoid consumption. Clubs, lodges and societies will also be asked to consider the subject at a meeting either on Tuberculosis Sunday or some other day of Tuberculosis Week.

## What Will Michigan Do With $100,000?

In the anti-tuberculosis campaign few states have had the opportunity which now is offered to the state of Michigan. The recent session of the legislature granted an appropriation of $100,000 for two years of work in the prevention and control of tuberculosis. What can Michigan do with that amount of money in two years?

Speaking generally, the money may be spent in accordance with a carefully worked-out plan looking toward definite ends, or it may be frittered away piecemeal in whatever little section of the great field seems for the moment to offer the most possibilities. Technically considered, the money may go for relief and treatment of patients, for study and investigation or for the arousing of public opinion. Whichever of these general and technical considerations is given most weight by the state board of health, to whom is entrusted the expenditure of the money, will determine the wisdom of the state in making the appropriation. The opportunity is a great one, not only for Michigan, but in its possibilities of example for other states.

Looking more closely at some of those considerations which will decide the policy of the state board of health, there is no doubt that a carefully planned program will be formulated and made public for general criticism in the near future. The combined experience of anti-tuberculosis workers throughout the country should help to crystallize such a program. That Michigan should not seek and profit by such experience is hardly thinkable.

As to whether the money shall be spent primarily for relief, investigation or education, the first of these considerations should be ruled out at once. The expenditure of $100,000 by the state in relief or treatment would have little or no effect upon the tuberculosis problem in Michigan because of the smallness of the sum involved. On the other hand, it would seem as if the most logical and the wisest expenditure of this money should be first along the line of a survey or study of the tuberculosis situation, and secondly, along the line of an extensive and intensive educational campaign that should have for its object the securing of adequate care for every consumptive.

When in 1910 the New York State Charities Aid Association adopted the slogan "No Uncared-for Tuberculosis in 1915," it adopted an ideal that was at once worthy of its highest endeavor and that was reasonably attainable. The rapid progress made in the last five years in New York should be an inspiration to Michigan. This progress never could have been attained without first of all a thorough investigation of the facts about tuberculosis, and secondly, a popularization of those facts to secure favorable public opinion. Michigan will get more value received by such a course of procedure than in any other way. It will be impossible to revolutionize a state in two years with $100,000, but by careful propaganda every town, city and country can be brought to realize its own responsibility for the control of tuberculosis.

This is the state board of health's biggest opportunity: to bring to the smaller political units of the state the responsibility for local care of the consumptive, and to make it possible to secure such care with the least effort and expenditure of money.

Five tuberculosis conferences for the discussion of matters of special interest to different sections of the United States are announced for this fall by the National Association for the Study and Prevention of Tuberculosis. The first in point of time and probably the foremost in point of attendance will be the Third Annual Mississippi Valley Conference on Tuberculosis at Indianapolis, Indiana, on September 29 and 30 and October 1. The others are the Southwestern Health Conference to be held in El Paso, Texas, the week of September 27 to October 3; the Second Annual Southern Tuberculosis Conference at Columbia, South Carolina, October 8 and 9; Second Annual New England Tuberculosis Conference, Springfield, Massachusetts, October 22 and 23; and Second Annual North Atlantic Tuberculosis Conference, Albany, New York, probably November 4 and 5.

The Minnesota Steel Company, Duluth, Minn., has begun the construction of a hospital building to cost $100,000.

# PHILANTHROPY AND THE PUBLIC HEALTH

THE NEW YORK ASSOCIATION FOR IMPROVING THE CONDITION OF THE POOR.
BAILEY B. BURRITT, General Director.
WILLIAM H. MATTHEWS, Director,
*Department of Family Welfare.*
DONALD B. ARMSTRONG, M. D., Director,
*Department of Social Welfare.*

## THE SANITATION OF PUBLIC LAUNDRIES

### The Bureau of Public Health and Hygiene Enters Neglected Field of Industrial Hygiene

PHILIP S. PLATT, Superintendent.

While the bureau, through a cooperative arrangement with the health department laboratories, is conducting elaborate bacteriological tests on the washing, drying and ironing processes in commercial laundries, the health department is printing and distributing to all public laundries a leaflet, prepared by the bureau and given below in full, entitled, "An Interpretation of Regulations of the Department of Health for the Conduct of Laundries."

In this almost virgin field of industrial hygiene, in which the workers' danger of infection is considerable, in which the method of washing is often insanitary, and the physical condition of the plant is generally exceedingly insanitary, there is a particular need for sanitary standards and cooperative advice. In this spirit the bureau has met and advised the city's laundrymen at several meetings at the health department.

As a part of a comprehensive program for laundry sanitation, the bureau's establishment last fall of a model wet wash laundry in the Milbank Memorial Bath, at 325 East Thirty-eighth street, may be recalled. Here, throughout the spring and summer careful bacteriological studies have been conducted, and the relative importance of such agencies as heat, soap and bleach in giving an extremely satisfactory germicidal action was determined. It appeared that while the soap solution in the dilutions used exerted no germicidal action, and the action of the bleach was only moderate, the temperature of the water (about 90° C.) which was attained was more than sufficient by itself to kill all bacteria. Results of further studies in a number of commercial laundries will be announced later.

In addition to these studies, the bureau has prepared a score card for laundries and assisted the health department in preparing its sanitary regulations, together with an inspection card to be used presently on the first systematic inspection of laundries.

The collection of data regarding sickness among laundry workers, while exceedingly difficult to secure, is being gradually accomplished. In this connection the studies by the New York State Ventilation Commission of the effect of hot, moist atmospheres on the mucous membrane of the nose and throat of laundry workers has revealed a surprising correlation between these unfavorable factors and a severe atropic condition of the nasal passages.

The interpretations of the laundry regulations of the department of health, to be placed in the hands of some 1,500 laundrymen, read as follows:

PROTECT

YOURSELF YOUR BUSINESS
YOUR EMPLOYEES YOUR CUSTOMERS

Interpretation of Regulations
Of the Department of Health
For the Conduct of Laundries.

REGULATION 1. Requires that the washroom *floors* shall be *smooth* and *watertight* and must be *clean* and *sanitary* and in *good repair.*

It is unhealthy to work in damp, dirty, insanitary rooms. On wet, slippery, uneven floors employees may fall and be seriously hurt. A cement floor, properly drained, is recommended.

REGULATION 2. Requires proper and adequate *light* and *ventilation.*

Employees cannot do their best work in dark, unventilated quarters. The increased efficiency of the workers will more than repay the cost of installing a ventilation system. Don't be afraid of open windows.

A dark, damp, dirty, hot corner of a cellar "wet wash" laundry. It is to such places that the so-called "hand laundries" send your garments to be washed.

REGULATION 3. Requires *suitable, sufficient* and *properly ventilated water closets.*

Decency and health demand this. Dark, cramped toilets cannot be kept clean. Facilities for washing hands should be provided, easily accessible, and washing should be insisted upon after using toilets. This means that running hot and cold water, soap and individual cotton or paper towels should be provided, and that the foreman or forelady require the use of these facilities.

REGULATION 4. Requires that every establishment shall be kept *clean, wholesome* and *inoffensive,* and *unprejudicial* to life and health.

This means that laundries must be made healthful places to work in, and that *any conditions* which harmfully affect the physical condition of the workers, such as excessive heat, excessive humidity, danger of infection, etc., must be improved. The Health De-

partment will help you decide what conditions are harmful to workers.

To safeguard further the health of the employees and the general public, the following recommendations are made:

Any employee having a cut, scratch or sore on his hands or face should report to the office of the laundry, where first aid will be applied. The State Department of Labor has authority to demand that a simple first aid kit be kept in every laundry. Such a kit should consist of the following articles, obtainable at any surgical supply house:

Instruments.

1 pair scissors.

Drugs.

2 oz. aromatic spirits of ammonia.
2 oz. 4% boric acid.
2 oz. alcoholic iodine solution, half strength (for external use).
2-3 oz. collapsible tubes of bicarbonate of soda mixed with vaseline (3%) (for burns)
2 oz. castor oil (for eye injuries).

Dressings.

1 doz. assorted sizes sterile gauze bandages.
1 spool Z. O. adhesive plaster, 1 inch by 5 yards.
3 ½-oz. packages of absorbent cotton.
3 1-yard packages of sterile gauze.
Wooden applicators wound with cotton.

At least one person should be instructed by a physician or trained nurse how to apply first aid to injured persons, and should have charge of the first aid kit and its maintenance.

Clothes obviously soiled by blood or pus discharges should be soaked in disinfectant before sorting, marking or washing. A solution of bleach (chlorinated lime), one pound to six gallons of water, will kill the germs in two to three minutes. This, of course, can be used only on white goods, and should be very thoroughly rinsed out. A disinfectant and deodorant which will not harm fabrics or bleach colored goods is "formalin." Use one gallon of liquid formalin to ten gallons of water. Let clothes soak for four or five minutes, then rinse thoroughly.

Employees should always wash their hands thoroughly with soap and hot water before lunch hour, before handling clean clothes at any time, and at close of day.

To avoid unnecessary handling of handkerchiefs, which contain the dangerous secretions of nose and mouth, they should not be marked individually but those from each family should be placed and washed in small bags.

Soiled clothes should never be shaken.

Marking and sorting platforms and floors should be thoroughly cleansed every day.

Drinking water facilities (not common cups) should be provided.

REGULATION 5. Requires that all soiled clothes shall be packed, when received, in containers which shall not be opened during transit.

This means that soiled clothes shall not be sorted, changed, and handled whatsoever, during the course of their transit in wagons on the street or upon the sidewalks. They shall always be kept in bags, nets or covered baskets until finally sorted for washing.

REGULATION 6. Requires that all soiled clothes shall be so treated in the process of washing, drying or ironing, as to destroy all pathogenic bacteria.

This is to protect the public. It is good business. It means that the Health Department forbids clothes containing living disease germs to be returned to the public. Disease germs may be in any wash. It does not state just how the disease germs shall be killed; it simply requires that the washing, drying and ironing process shall be sufficiently vigorous to accomplish this. During the "suds" the water should be at least 160° Fahrenheit, and should continue for at least twenty minutes at this temperature.

REGULATION 7. Requires that soiled clothes shall not be sorted, marked or handled in close proximity to the washed (clean) clothes.

The reason for this is obvious. The clean clothes must not be contaminated by the germs or insects on the soiled clothes. There is danger of this if the soiled clothes are not handled at considerable distance from the clean.

REGULATION 8. Forbids eating in rooms where soiled clothes are handled; or cooking where laundry work is done.

This is also to protect the health of the employees. In handling soiled clothes the hands of the workers become soiled with the invisible germs which are generally present. When food is eaten with these hands unwashed, the germs are carried to the mouth and may cause sickness. Always wash hands before eating and don't allow employees to eat in sorting room.

REMEMBER!

The Department of Health is ready and eager to assist the laundry industry, employers and employees, steam laundrymen and hand laundrymen, to give the public sanitary, cleaned clothes, and the laundry workers sanitary conditions of employment.

The wide field which these regulations so thoroughly cover and the cooperative and advisory nature of the interpretations will be readily observed. It is believed that an approach of this nature will have far more lasting benefit, through its educational and fair-play appeal, particularly at the outset of the campaign, than the more aggressive method of arrest and fine.

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### The Harvard Unit in the War

The nurses of New England, as well as the public generally, are following with a great deal of interest the work and fortunes of the so-called Harvard Unit that left this country in June to assist in caring for the soldiers falling within the ranks of the Allies, at a British base hospital in France.

No more representative nursing body has left our shores than these seventy-five young women, selected with care, for the most part, from New England hospitals.

According to Dr. Nichols, who returned to arrange for another contingent to be sent, they are under control of the British War Office and are therefore subject to strict discipline as well as in line for any emolument likely to come from such an attachment.

Dr. Nichols says:

"I wouldn't tell you where we were sent but for the fact that it already has been published in the English papers. We were some 15 miles from Boulonge, between two villages named Dannes and Camier—or rather, the place is spoken of as Dannes-Camier. It is only two miles from the shore and only a few miles from Etapes and the Paris Plage.

"There we saw our base hospital, where we were to serve. It was a camp hospital, one of the many scattered about behind the west front, on the railroad lines. The wards for the wounded were wall tents, holding 14 men apiece.

"There were bell tents for the officers, and enlisted men of the medical service did our cooking and camp policing. It was the best policed and cleanest camp I ever saw; flies were absolutely unknown."

The hospital system is precisely like that of our best hospitals in this country and consequently the nurses fell into the work very easily.

Another hospital near by is cared for by a Chicago unit.

It is an item of interest that these college units are being sent over at the urgent request of Sir William Osler.

It was the pleasure of the medical men to respond with alacrity to his call, and the nurses also should heed his request in the same spirit, as they have had few stancher friends in this country than Dr. Osler. For proof of this statement it is only necessary to recall his instruction given from time to time to the nurses in Johns Hopkins Training School.

# PREVENTION OF BLINDNESS
# MATERNITY

*Conducted by* CAROLYN CONANT VAN BLARCOM, R. N.,
*Secretary National Committee for the Prevention of Blindness;*
*Chairman Committee on Prevention of Blindness and*
*Midwives National Organization for Public Health Nursing.*

## For Organized Preventive Work

BY CAROLYN CONANT VAN BLARCOM.

For some years past the subject of prevention of blindness has appeared frequently upon the programs of medical meetings, and in conferences of health officers, nurses and social workers. The statement is made and reiterated that more than a quarter of the blind children in the schools for the blind in this country are sightless because their eyes were neglected at or soon after birth—the accoucheur neglected to use the prophylactic (a silver solution) so well known to the medical profession, or to give the needed medical care for the baby's sore eyes.

The familiar statement that ophthalmia neonatorum—capable of causing lifelong blindness—is both preventable and curable, is so generally accepted today as to be almost axiomatic. Almost each year there is written on the statute books of some state a law which is designed to safeguard the eyes of babies. And yet the percentage of ophthalmia neonatorum victims admitted to the schools for the blind year after year varies but slightly, and we are forced to admit with no little chagrin that scarcely more than a scratch has been made on the crust of the problem as a whole.

(Date).....
To the Health Officer:
You are hereby notified that (name).....
..... (address).....
was born on (date).....
and is suffering with sore eyes.
(Check the statement that applies to this case)
1. I will assume full responsibility for the case.....
2. I would like to have the Health Dept. secure hospital care for this case.....
3. I will continue to treat this case, but
   (a) Would like to have the assistance of a nurse.....
   (b) Would like to have the Health Dept. take a smear.....
   (c) Would like an expert consultant.....
   (Name of physician).....
   (Address).....

Fig. 1. Suggestion for blank on which all cases of babies' sore eyes might be reported.

If the sad procession of little blind children, with state institutions as their goal, is to be eliminated, something more definite and practical will have to be done than the enactment of laws which only become dead letters, and the making of speeches and reading of papers before selected audiences.

Unquestionably, the first step to be taken in this practical work is the enactment of laws providing for the compulsory reporting to local health officers of all cases of babies' sore eyes. This would make possible the provision of medical attention for all uncared-for cases, for the battle is less than half won, even though complete reports are secured, if nothing further is done.

But we find upon making a survey of the laws that more than half of the states (thirty) do require that ophthalmia neonatorum be reported.[1]

Why, then, are the babies still going blind? Because, excepting in a very few communities, the law is neither obeyed or enforced, nor is any official action taken when information upon an occasional case does find its way to the department of health.

Fig. 2. Visiting nurse in the employ of the Department of Health, to visit all reported cases.

The filing of a report is valuable only if it instantly sets in motion a piece of official machinery capable of meeting the needs of the individual baby. At the present time the facilities at the disposal of the average health officer for giving efficient assistance, when this is desired

[1]To ascertain how far provisions for the control of ophthalmia neonatorium exist in the various states, the New York State Committee for the Prevention of Blindness has made a study of the laws and regulations which relate to this matter, these being summarized as follows:

1. The reporting of babies' sore eyes to a physician or local health officer is compulsory in 30 states.
2. The reporting law is printed on the birth certificate in 5 states.
3. Local health officers are authorized and required to secure medical attention for uncared-for cases in 11 states.
4. Births are reported early enough to be of assistance in prevention of blindness work in 4 states.
5. The question as to whether or not precautions were taken against ophthalmia neonatorum is included on the birth certificate in 9 states.
6. Free prophylactic outfits are distributed to physicians and midwives in 12 states.
7. The use of a prophylactic as a routine is compulsory in 6 states.
8. Popular educational leaflets, relating in whole or in part to prevention of infantile blindness, are distributed by State Departments of Health in 19 states.

A complete tabulation may be obtained upon application to the office of the committee, 130 East 22nd street, New York City.

by the attending physician, or needed by the attending midwife, are so limited as to be practically without value to the suffering baby. Each local health department needs in its employ a nurse to visit each midwife case and to secure such care as is necessary, and also to give visiting nursing assistance to those doctors who wish it; or there should be such cooperation with a local organization that the services of a nurse may be obtained immediately for eye work when necessary. An infant welfare nurse is admirably situated to render such service if a special eye nurse cannot be employed.

And in addition to this, there should be accessible eye clinics to supplement home care when desirable, and also

Fig. 3. Putting drops in the baby's eyes immediately after birth. This should be done as a routine.

such hospital facilities for the reception and care of severe cases of ophthalmia neonatorum that, without an hour's delay, an infected baby and its mother may be admitted and the work of saving its sight begun at once.

The value of some such practical work as outlined above has been demonstrated in a number of cities in the country, notably Boston, Cleveland and Nashville, while a somewhat more detailed system for preventing infant blindness through official action is under way in Buffalo. Health Commissioner Fronczak, through his health bulletin, supplemented by a circular letter, notified each physician in that city that

1. Babies' sore eyes was a reportable disease.
2. It was his intention to prosecute doctors and midwives alike who were found to be disregarding this legal requirement.
3. As his sole purpose in taking this attitude was to safeguard the eyes of babies, he would give as much assistance to the doctors as they wished or would accept, and therefore

(a) He offered nursing service and bacteriological examinations to those doctors who requested this form of assistance, or

(b) He would provide hospital care for those infants who needed more attention than could be given at home.

4. All midwife cases would be visited and supervised by the Department of Health.

In short, Commissioner Fronczak is determined that there shall no longer be unreported or uncared-for cases of babies' sore eyes in Buffalo—which means no more babies needlessly blind.

It cannot be denied that such work as has been started by Commissioner Fronczak would be impossible for many local health officers, because of the absence of legal authority to act, the lack of facilities with which to carry out the provisions of the law, should one exist, or, what is most important of all, the lack of support of this branch of public health work by the people in the community.

No amount of effort on the part of the health officer can be effective if after bringing a case into court the judge dares to throw it out with the remark that "any baby may have sore eyes, just as any one may fall down stairs," as actually happened in Connecticut.

Quite obviously the crux of the situation is to be found in the educational work, for no amount of legislation will protect the eyes of the individual baby if public opinion is not back of its enforcement.

The public must be so informed and enlightened that the health officer will feel secure in attempting to exercise his prerogatives, and the courts will not dare to disregard the rights of even an infant citizen to the state's protection.

In short, the success of our endeavor to secure the routine use of a prophylactic, the unfailing observation of the reporting law, the employment of a visiting nurse for eye work, and the provision of hospital facilities is really in the hands of the public.

The most far-reaching appeal for the aid of the public is the educational campaign which has been undertaken in this country under the direction of Dr. Frank Allport, Chairman of the Committee on Conservation of Vision of the American Medical Association. Dr. Allport's plan provides for at least one educational meeting annually on

Fig. 4. Hospital facilities for treating severe cases of babies' sore eyes.

the subject of prevention of blindness, to be held by each county medical society throughout the United States.

As the work of the New York State Committee for the Prevention of Blindness is largely educational, the popular meetings in New York are arranged jointly by the Committee of the American Medical Association, the New York Committee for the Prevention of Blindness and the health officers.

In order to give greater stability to this work, the Medical Society of the State of New York adopted resolutions at its last annual meeting, held April 27-29, in

Buffalo, endorsing this cooperative movement,[1] while some of the health officers through their bulletins have announced their intention of furthering vigorously prevention of blindness work in their communities.

It has also been found helpful to secure the cooperation of the superintendent of schools, women's clubs, nursing organizations, the Y. M. C. A., the churches, associations for the blind and any other organizations influential in the community.

Preparation for the meetings includes newspaper notices, announcements in the schools, churches, clubs, etc., and the posting of bulletins in public places. Sometimes it is possible to have prevention of blindness included in a general public health program, or in the program of an infant welfare week. The meetings are enlivened by the use of lantern slides on the various causes of unnecessary blindness and methods of prevention and with photographic exhibits, while educational leaflets printed in various languages are freely distributed.

It is believed that through this cooperation of official and unofficial bodies, both lay and medical, the ends which the state laws were designed to reach—that is, prevention of blindness among infants—will at least be approached.

Clearly, if babies are to be saved from blindness the country over, the successive steps to be taken are, first, the enactment of certain laws by the legislatures; secondly, fearless and unremitting action on the part of local health officers in enforcing these laws; and thirdly, staunch support and cooperation from the public at large. This requires public education—widespread and unceasing—sane and unprejudiced.

[1]These resolutions were as follows:

*Whereas:* About 26.8 percent of the total enrollment of pupils during 1914 at the New York State School for the Blind are blind as a result of ophthalmia neonatorum; and,

*Whereas:* Ophthalmia neonatorum is not necessarily a gonorrheal disease nor a reflection on the virtue of father or mother, but an infection which may occur in any labor; and,

*Whereas:* Blindness from ophthalmia neonatorum would practically never occur if a prophylactic were used in the eyes of every infant at birth, and if all cases of sore eyes among infants were promptly and adequately treated; and,

*Whereas:* The Committee on Conservation of Vision of the Council on Health and Public Instruction of the American Medical Association is endeavoring to have such uniform laws enacted in all states as will secure the adoption of these two measures; and,

*Whereas:* There are already on the statute books of the State of New York the necessary laws, and in the organization of the State and City Departments of Health the requisite machinery for the enforcement of these laws: Be it

*Resolved:* That the Medical Society of the State of New York approve the contemplated action of the State Department of Health to have all cases of redness or swelling or discharge from the eyes of newborn infants reported promptly in such a way as to secure adequate medical treatment for cases not in the care of a physician, or such assistance from the health officer in the shape of nursing or consultation or laboratory investigation as the attending physician may desire; and be it also

*Resolved:* That the Medical Society of the State of New York, furthering the efforts of the Council of Health and Public Instruction of the American Medical Association, endorse the effort of the State Department of Health and the New York Committee for the Prevention of Blindness to extend in New York State an educational campaign among laymen for the conservation of vision, and that the local medical societies be urged to lend their assistance in furthering prevention of blindness work in their respective communities; and be it also

*Resolved:* That the Medical Society of the State of New York recommend to the Public Health Council of the New York State Department of Health that it declare suppurative conjunctivitis a reportable disease as well as ophthalmia neonatorum.

The new Tacoma General Hospital, Tacoma, Wash., erected and equipped at a cost of $225,000, was opened September 1. The building is 284 feet long by 50 feet deep. It is three stories high, with two basements. The exterior construction is of cream-colored glazed brick. Situated at the top of a hill overlooking the entire city, the hospital makes an imposing appearance. The interior of the new structure possesses the latest approved sanitary features. All rooms have outside exposure, and there is a large outdoor sleeping porch for patients. Five operating rooms have been provided. The equipment of the building is said to be very thorough and up-to-date. The hospital was designed by Architects Heath & Gove, of Tacoma.

# DEPARTMENT OF LIFE EXTENSION

Conducted by EUGENE L. FISK, M. D.
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## Findings of the Life Extension Institute in Physical Examination of Industrial Workers

Like other classes in the population, practically all industrial workers are injured, their working capacity reduced, their lives shortened and their capacity for enjoyment and achievement limited by faulty personal hygiene or bodily neglect due to ignorance of bodily condition.

The prevention of industrial accidents and of occupational poisoning, the proper sanitation of factories and workshops and the protection of workers against communicable diseases is a splendid and important work already highly organized and producing tremendous results, but the protection of the worker from self-injury, by faulty living habits and from the gradual impairment of the machinery of his body through neglect, is a work not yet highly organized, but offering even greater promise for human betterment than the comparatively narrow field of industrial hygiene.

After we have dealt with the superficial and obvious causes of death and disease arising in the shop environment of industrial workers, such as hazardous machinery, dust and poisonous fumes or the absorption of chemical poisons and the spread of communicable disease, there still remains to be dealt with a heavy mortality and a widespread impairment from chronic diseases of the vital organs and tissues, which are not caused by occupational conditions *per se*.

We have here to deal with a physical trend and a premature physical failure which is manifest in all walks of life, and is not to be overcome by safety devices, shop hygiene and public sanitation, however valuable and necessary such measures may be for other protective purposes.

We have here to deal with the total impact of modern life on the individual, and we have to consider the ways and means by which the reaction to such impact shall be an increased longevity and a higher life; a life emancipated from needless physical handicaps; a broader, fuller life in which latent ability for achievement and enjoyment shall have adequate play and not be cramped, confined and withered by premature decay.

The work of studying the total health needs and health possibilities of the individual is just commencing in a thoroughgoing and systematic way. A few municipal and state health departments are already including personal hygiene, even as related to diet and exercise, in their educational propaganda, and they are urging upon the people the importance of inspecting regularly and rigorously that community of cells known as the human body. This is a work that should, and doubtless will, be greatly extended.

The physical examination or health survey of the Life Extension Institute is designed to ascertain the total con-

dition of the individual and measure how far he falls below his attainable condition of bodily efficiency and well-being.

The figures in this paper show the results of the examination by this Institute of a group of 1,000 foremen and skilled workmen in the Ford Motor Company at Detroit, working under most favorable conditions as to environment, compensation and emergency medical aid, compared with the results of the examination of 1,000 bank clerks, etc., in New York City.

At the Ford Motor plant two examining rooms were built and fully equipped in the factory, and three physicians, assisted by two medical students, were detailed to carry on the work, one physician working eight hours a day and the others four hours each. In this way it was possible to make about fifty examination a day, when the men were marshaled for examination at twenty-minute intervals. Electric headlights were used in the examination of the eyes, ears, nose and throat; electric sterilizers were used for sterilizing the instruments; and the blood pressure was taken by the auscultatory method with mercurial instruments. The men appeared for the examination stripped to the waist, and with their consent were entirely stripped before the examination was completed. Most of the work was done under the personal supervision of the Director of Hygiene, who checked the doubtful conditions, especially in circulation, and endeavored to maintain uniform standards for carrying on the work in each examining room, as it was desired to make a special study of this particular group with regard to the influence of living and working conditions and living habits and also to derive fixed standards for recording impairments.

This group was selected by Dr. James E. Mead, Medical Director of the Ford Company, for special study by the Institute because of its homogeneous character. It was Mr. Ford's desire to secure information regarding the influence of living habits in causing impairments and to ascertain what opportunity might exist for improving the health and efficiency of this group of important workers. The results are now being studied in order to determine the probable value of the system in the general plan of adapting the work to the worker and the worker to the work, and in assisting the worker to get the most out of life activities which are becoming highly specialized and effective at this particular plant.

It is interesting to know that such an examination can be made, on the average, in twenty minutes, and that it will elicit the information exhibited in the following analysis of impairment found, which are compared with results of examinations made by the Institute of 1,000 employees in banks, trust companies and commercial houses in New York City.

Analysis of physical examination of 1,000 industrial workers (foremen and skilled workers) in the Ford Motor Company, Detroit, and comparison with the results of 1,000 examinations of employees of banks, trust companies and commercial houses in New York City:

| | Detroit Ford Industrial | N. Y. City Commercial |
|---|---|---|
| EMPLOYEES | 1,000 | 1,000 |
| AVERAGE AGE | 32.7 years | 27 years |
| PERFECT | .00% | 1. % |
| IMPERFECT— | | |
| Advice needed regarding physical condition or living habits | 100. % | 99. % |
| Referred to physician for treatment | 69. % | 81. % |
| Of those referred to physician there were aware of impairment | 10.15% | 11.54% |
| IMPERFECT— | | |
| Advice needed regarding living habits or physical condition, but immediate treatment not required | 31.1 % | 17.7 % |
| MODERATELY IMPAIRED— | | |
| Referred to physician for treatment and report sent to physician | 22.9 % | 18.5 % |
| No physician or none given. Urged to seek medical treatment or guidance | 39.9 % | 58. % |
| SERIOUSLY IMPAIRED— | | |
| Referred to physician for treatment and report sent to physician | 3.6 % | 2. % |
| No physician or none given. Urged to seek medical treatment | 2.5 % | 2.8 % |

CLASSIFICATION OF IMPAIRMENTS

| | Ford Industrial | New York Commercial |
|---|---|---|
| *Impairments—* | | |
| Heart | 3.5 % | 16.2 % |
| Arteriosclerosis—thickened arteries | 24.65% | 42.4 % |
| Slight thickening of arteries | 29. % | ..... |
| High or low blood pressure | 23.1 % | 26. % |
| Urinary, albumin, casts, etc | 45.6 % | 39.8 % |
| Combined urinary and other serious conditions | 26.6 % | 24. % |
| Total urinary or circulatory conditions | 72.3 % | ..... |
| Nervous | .3 % | 1.1 % |
| Lungs | 5.7 % | 2.9 % |
| Venereal (syphilis) | 1.2 % | .3 % |
| Venereal (gonorrhea) | .2 % | ..... |
| *Minor to Moderate—* | | |
| Functional circulatory pulse (rapid, slow, irregular) | 21.6 % | 14.8 % |
| Urinary | 26.6 % | 20.8 % |
| Digestive disturbances | 9. % | 7.3 % |
| Constipation | 14.7 % | 17.2 % |
| Nose, throat, respiratory | 42. % | 28.5 % |
| Ears | 30.3 % | 20.3 % |
| *Teeth and gums | 69.5 % | 47.8 % |
| Anemia | .4 % | 2.7 % |
| Skin | 6.8 % | 9.1 % |
| Errors in diet | 54.1 % | 59.8 % |
| Errors in personal hygiene | 50.5 % | 54. % |
| *Physical defects—* | | |
| Faulty vision | 41. % | 31.1 % |
| Flat foot | 2.3 % | 4.3 % |
| Faulty posture | 18.1 % | 17.7 % |
| Rupture, no truss | 2.4 % | 1.8 % |
| Overweight (25%) | 12.8 % | 3.2 % |
| Underweight (25%) | 7.7 % | 15.1 % |
| Unclassified | 16.5 % | 10.1 % |

The notable feature of this analysis is the fact that 53 percent of this favorably-conditioned group showed signs of premature aging, as evidenced by arterial changes, varying from slight radial thickening to advanced arteriosclerosis. These conditions were very critically checked and an agreement reached by the examining staff regarding the technic and standards for determining arterial changes. The technic is, of course, simple; yet it must be properly performed or very pronounced thickening may be overlooked; or, on the other hand, high tension may be mistaken for thickening. It is not enough to merely feel the tension of the arteries. The proximal and distal circulation should be cut off by the index and ring fingers, and, if the artery is found palpable and cannot be obliterated by the middle finger, and presents a ribbon-like or tape-like feeling, when firmly pressed over the bone, thickening should be recorded. I dwell on this simple proceeding as it seems to be so commonly neglected and there is

*Teeth (Ford, industrial), 14.27%; gums, 14.07%; both, 41.01%.

no possible doubt that, in average clinical work, a faulty standard for determining this condition exists.

I am aware that certain authorities have postulated a condition of localized spasm occasionally present under this technic, and also that the "dead-house" does not always confirm the diagnosis of thickening found in the clinic. Studies at Romberg's Clinic have laid special emphasis on this fact, and the *Journal of the American Medical Association*, commenting on the conflicting views regarding the reliability of evidence derived from palpating the arteries, raises the question as to whether this procedure furnishes a reliable means of detecting thickening. Mere palpation does not, but proper manipulation of the radial, brachial and other accessible arteries should enable one to determine whether such a simple physical fact as thickening of this normally soft elastic tubing is present. Merely rolling the artery under the finger is not sufficient and may well mislead one into adjudging a high tensioned artery to be thickened. It seems probable to me that mere palpation, as in feeling the pulse, is a frequent source of error, even in important clinics, and that when the technic is properly followed in these cases, true thickening will be always recognized and found to be a constant condition. It is so often associated with other impairments that it must, at least, be regarded as evidence of an unfavorable circulatory condition and an inferior quality of "vital rubber."

Another source of error is the widespread idea that high blood pressure necessarily accompanies arterial thickening. This, of course, is not so. Unless the splanchnic vessels are involved, or there is nephritis, the pressure may even be lower than normal, as was found in a number of cases of well-marked thickening in this group. High blood pressure does, of course, precede and accompany many cases of arterial thickening.

The presence of albumin, casts or sugar in 45 percent of cases is consistent with the other conditions found, and is further evidence that the average worker is physically imperfect. In 27 per cent of cases circulatory impairment was associated with albuminuria. Albumin is reported only when the reaction is found with heat and nitric acid or Heller's tests. The methods of using these tests have been very critically checked and standardized, and all sources of possible error or fallacy guarded against While albuminuria is found to be a very common condition among men, apparently in average health, the fact that 55 percent showed no albuminuria disposes of the theory advanced by some that slight traces of albumin are normally present in the urine.

Pulmonary tuberculosis or conditions rendering antituberculous observation and hygiene advisable were present in 6 percent of this group.

In this group of pulmonary cases 31 percent showed very slight physical signs, possibly of no significance; 51 percent showed more pronounced physical signs that are associated with unfavorable constitutional symptoms, but no positive diagnosis was made; 18 percent showed more advanced conditions than the above, and might be classified as frankly tuberculous.

Only 8 percent showed malnutrition and underweight; and 13 percent showed gross overweight and overnourishment.

Mouth infection stands out as one of the most serious conditions in this group, and it may well be that much of the circulatory and renal impairments are due to this cause.

It would be strange indeed if a thorough physical examination did not reveal a high percentage of impairments in a group showing such a large proportion of focal infection.

Entirely apart from carious teeth, 55 percent showed evidences of pyorrhea or Riggs' disease, and many of these cases were of the advanced type. The conditions found raise the question as to the possible communicability of this disease. If the ameba buccalis be the offending organism, the spread of this infection through the common drinking cup should be considered. Men in this group were instructed in the perils of the common drinking cups, and were urged to use individual cups, but common cups were furnished at the water coolers supplied in the factory proper, although drinking fountains were employed in the general offices.

The fact that 54 percent showed serious errors in diet and 50 percent showed other serious errors in personal hygiene shows the opportunity for improvement along these lines through simple instruction in diet reform and personal hygiene.

The fact that 69 percent were found in need of some form of medical treatment or guidance and that only 10 percent of this number were aware of impairment shows the opportunity offered to preventive medicine by this health survey.

This paper is offered as a preliminary study only, as the examinations have only recently been completed and there has not been an opportunity to study fully the relationship of the various impairments. The following items are, however, of interest:

1. Number using alcohol, 578; of this group 383, or 74 percent, have urinary or circulatory impairment.
2. Number of non-users of alcohol, 492; of this group 336, of 68 percent, have circulatory or urinary impairment.
3. Number with infected gums, 552; of this group 435, or 78 percent, have urinary or circulatory impairment.
4. Number not having infected gums, 448; of this group 283, or 63 percent, have circulatory or urinary impairment.
5. Total number with mouth infection, 695; of this group 547, or 78 percent, have circulatory or urinary impairment.
6. Number using tobacco, 764; of this group 545, or 71.35 percent, have mouth infection; 446, or 58 percent, have circulatory impairment.
7. Number non-users of tobacco, 236; of this group 118, or 50 percent, have circulatory impairment; 150, or 63.55 percent, have mouth infection.
8. Number overweight (15%), 180; of this group 138, or 76 percent, have urinary or circulatory impairment.

It may be stated, with considerable confidence, that the prominently unfavorable conditions and influences appearing in this group are: over-nourishment, ill-balanced nourishment, alcohol, tobacco, mouth infection and other focal infections.

Taking the average age of the group into consideration, it does not radically differ in the matter of the number and degree of impairments from other large groups in totally different occupations; the occupational influence *per se* is a minor factor. This becomes evident when we compare the results of examinations of commercial groups in New York City. The percentage of tuberculous subjects is somewhat higher than we have found in commercial groups, and this, of course, may be due to the fact that many of these men, in the course of their work, are exposed to mineral dust, although this condition is present in a pronounced degree only in certain departments.

The percentage of mouth infection and of nose and throat infection is higher than in the commercial group; likewise, the percentage of arterial and renal impairments. This gives emphasis to the importance of mouth infection and other focal infection arising in the head as factors in causing these cardio-vascular-renal diseases. An interesting point is a fact that the use of tobacco does not, as

some have claimed, apparently protect against mouth infection, but according to the evidence seems to lower the resistance to infection. The percentage of organic heart disease is much lower than in the commercial groups, but this may be due to the fact that these men were physically examined for this trouble before employment.

The group, as a whole, may be regarded as an average group of its class, and the large number of impairments found simply reflects average conditions. To those who are satisfied with such average conditions this work will not appeal. Nor will it appeal to those who believe that man has reached the pinnacle of his physical, moral and social development. Neither will it appeal to the *laissez aller* standpatter, who believes that we should consider everyone healthy until he breaks down, who believes that the conditions causing death from apoplexy and nephritis arise in a night and have no small beginnings, who ignore slight arterial thickening, slight albuminuria, moderate rise in blood pressure, and other danger signals, until frank pathological degeneration makes its appearance.

To those who believe in human progress, who look forward with confidence to a better state of affairs for the human race, these facts will be accepted not in discouragement but in hopeful interest as evidencing the tremendous opportunities for effecting such improvement.

## WAR HAS NOT INCREASED PRICES

### Staples Used in Hospitals Are Just About Where They Were a Year Ago

The purchasing committee for the state hospitals for the insane, consisting of Dr. E. H. Howard, M. C. Ashley, R. H. Hutchings, and Stewards C. S. Pitcher and George F. Watson, has just completed an extensive opening of bids for three months' supplies for the state hospitals under the system of joint purchase perfected by the state hospital commission.

The bids ranged in volume from 13,000 barrels of flour and 1,250,000 pounds of beef to the quarterly supply of salt required.

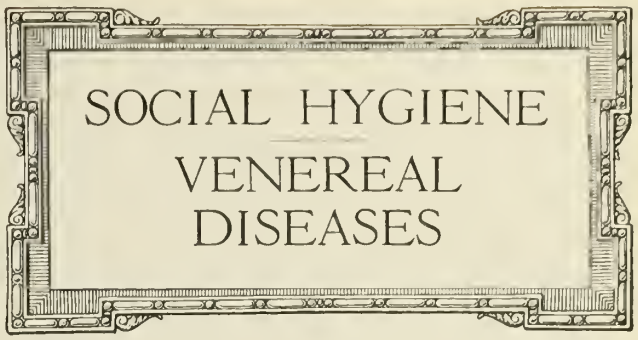
The committee found that the war had not, as feared, seriously affected the prices of the staple articles comprising hospital dietaries. The commission is paying this year $58,895.84 for 12,887 barrels of flour, as against $58,771.73 for 12,211 barrels contracted for in 1914.

In farinaceous foods, comprising the large items such as rice, beans, peas, hominy and rolled oats, the prices were found to be materially lower.

In meats an unexpected development was, that contrary to the recent past, the supply of domestic beef was apparently greater than heretofore, as better figures were obtained than those quoted for Argentine beef, quantities of which the committee has recently bought by reason of its more reasonable price.

### First Aid

She had attended the ambulance classes and obtained the certificate. The street accident she had earnestly prayed for took place. A man had broken his leg. She confiscated the walking stick of a passer-by and broke it into three pieces for splints. She tore her skirt for bandages. When all was completed she summoned a cab and took him to the hospital. "Who bandaged this limb so creditably?" inquired the surgeon. "I did," she blushingly replied. "Well, it is most beautifully—most beautifully done; but you have made, I find, one little mistake; you have bandaged the wrong leg."—*The Medical Pickwick.*

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### Influence of Syphilis Upon Insanity and in Marriage

More than one-eighth of the cases of insanity annually admitted for treatment to Michigan state hospitals for the insane are directly caused by syphilis. Syphilis is the cause of every case of paresis, the most severe and uniformly fatal form of mental disorder which is treated in any considerable number in hospitals for the insane. In addition to paresis there are annually treated a small number of cases of insanity which are due to various other severe pathological changes in the brain produced by syphilis. In the year 1913-1914 insanity resulting from syphilis constituted 12.9 percent of all cases admitted to the Michigan state hospitals, and formed the third group in point of largest numbers. It was the direct cause of insanity in 17.5 percent of all males and 6.65 percent of all females admitted.

In order to ascertain the general prevalence of syphilis among the insane in institutions a systematic use of Wassermann's test was made in 1,546 patients admitted during the year 1913-1914. In 21.6 percent of 940 males who were tested there were obtained positive reactions, and an additional 3.6 percent were strongly suggestive of the presence of syphilis. In 74.8 percent of the males the test was negative. Among 606 females who were tested positive reactions were obtained in 12.7 percent. Of all admissions 18.1 percent gave positive reactions, 4.17 percent were questionable and 77.2 percent were negative in their reactions. It is thus shown that besides those admitted for paresis and cerebral syphilis there was a considerable percentage of others who have syphilis, although they may be admitted with some other type of mental disorder. During the past 24 years the proportion of cases of paresis has varied among the males admitted to the state hospitals for the insane from 11.1 percent to 17.5 percent, and among the females from 2.1 percent to 6 percent. Within recent years the disease has become more frequent among the total number of females annually admitted.

In its indirect effects syphilis is of extreme importance. Not only is it responsible for the insanity of the patient, but a high percentage of the conjugal mates become infected by the patient or are the source of his infection. It is also responsible for the reduction of the birth rate in the families of the paretic and for a severe impairment of the nervous and physical health of their descendants. Dr. R. H. Haskell, of the State Psychopathic Hospital at Ann Arbor, reporting the results of a study made by him on the influence of syphilis and paresis upon the conjugal mate and children of the infected individuals, says:

"Among 53 married individuals who were diseased with paresis there were 17 or 32 percent of instances in which the wife or husband was infected with syphilis as shown by the Wassermann test. This figure, though high, must not be taken as representing the whole situation. One

wife acknowledging a severe infection had had careful treatment and presented a negative reaction at this time. The first wife of a patient, whose second wife now has a strongly positive reaction, herself died of syphilitic disease. In the case of two female paretics, one husband also has paresis and the other died recently of locomotor ataxia. Since both of these diseases are syphilitic in nature they should be added to the total. There are numerous other factors which might tend to swell this figure, but adding only these definite cases one finds in 55 paretic patients a total of 21 mates infected with syphilis.

"Separated into sexes, we find that in 49 cases where the husband is paretic, 17 wives are infected with syphilis; in six cases where the wife is paretic, the husband is infected four times.

"While these figures are high, they are not greatly higher than other investigators have found, and as already suggested probably underestimate rather than exaggerate the true situation. In one study, that of Plaut and Goering, it was found that the other mate showed a positive reaction in 32.6 percent of 54 cases of paresis, while in our cases the proportion is 38.18 percent.

"Unfortunately we have not yet been able to perform the Wassermann reaction upon a sufficiently large number of children of our patients to warrant drawing conclusions from them. It may suffice to say that Plaut, in the same investigation referred to, found 26 among 100 children in these same families to show a positive Wassermann reaction. Forty-five of these same children showed some defect in their physical or mental makeup, although, as a rule, they were intellectually well gifted.

"We have also been able to collect 86 cases of married paretics where the anamnesis concerning matters of family life was definitely dependable to allow the drawing of conclusions concerning the matter of sterility, abortions and total number of living born children. The situation is set forth in the following table:

CHILDREN OF MARRIAGES OF PARETICS

| | Total No. | Sterile Completely | Abortions only | Total No. Abortions | Living Born Children |
|---|---|---|---|---|---|
| Male general paretics..... | 76 | 22 | 10 | 41 | 110 |
| Female general paretics... | 10 | 6 | 1 | 1 | 13 |
| Total ..... | 86 | 28 | 11 | 42 | 123 |

"This table shows that of 86 marriages 39 or 44.8 percent were absolutely childless at the time one of the two mates came into the hospital with paresis. The average number of living born children in this whole group is 1.4 children to each family. If we subtract from both totals of marriages and total number of children two cases with unusually large families of 10 and 12 children, respectively, we find the average number of children brought down to 1.2 per family. If we consider only those families with living born children we find an average of 2.24 children per family.

"But study of these histories shows that at the time the paretic parent entered the hospital 20 of this extremely small total of 123 children had already died. Usually these deaths were in early infancy, as in the following illustrations: One immediately and one at the end of the first day; one at the end of first week and the other of hydrocephalus at five months; one of spasms at five weeks; one of convulsions in early infancy. Subtracting this number of 20 children already dead and omitting the two distinctly unusual families we find at the time the patients enter the hospital with paresis a total of only 81 living children among 84 families or less than one living child per family.

"These observations, showing that 38.18 percent of the mates of paretics have syphilis; that the children to a large number show either evidences of hereditary lues or signs of congenital weakness, either physical or mental; that the proportion of living children is far below the average and the number of childless marriages is abnormally high; together with the findings of Salmon, that general paralysis in New York State stands eighth in the mortality tables and that one out of every nine male deaths between 40 and 60 is from general paralysis, should give some insight into the magnitude of general paralysis as a public health problem."

### The City Mothers' Bureau of Los Angeles, Cal.

Los Angeles was one of the first cities in this country to employ police women, an experiment which has attracted much attention and seems to have been successful. The city is now trying out another new plan in its City Mothers' Bureau, consisting of ten women appointed by the chief of police, to confer with, advise, and assist the police department. Mrs. Aletha Gilbert, who has charge of the bureau, is one of the police women and has had some twenty years' experience in active police work; the other members of the bureau serve without pay.

The work undertaken is intended to be preventive rather than reformatory, to keep out of the courts boys and girls who are guilty of misdemeanors or who seem likely to become juvenile offenders, to be of practical assistance to parents and children, where sons and daughters are slipping away from parental control, or where parents are proving incapable of administering to the welfare of their offspring. To accomplish this cases are investigated, and advice and counsel given confidentially both to the children and to their parents. Backed by the official standing of the bureau such help carries with it a peculiar kind of authority. It will be the policy of the bureau to report first offenses to the home instead of to the court, to care for wayward girls by placing them, when possible, in private homes, and to find employment for those who wish it. Motherless girls, and girls away from home, or those whose home conditions are not conducive to their development are the especial care of the bureau. All such are invited to bring their perplexities to the City Mothers. Another duty of the bureau will be the supervision of public dance halls and other public places of amusement. Municipal dances are also being arranged under the chaperonage of the City Mothers. An industrial school for girls is projected, advice and help are given to women whose husbands have deserted them; careful attention is being given to the new problem presented by the groups of boys and girls who are employed by the moving picture companies. The bureau has apparently succeeded in putting out of business "pennant stands" where girls were in charge and dice shaking permitted. The Mothers wear an official badge as the symbol of their municipal authority. No definite limits are placed upon their activities and their work seems likely to be extended in many directions. A committee of school women is in cooperation with the City Mothers in discovering contributory causes of juvenile delinquency and in consideration of needed remedial legislation. The strictest confidence is maintained with regard to all details of the work. Legal protection is assured to all those who stand in need of such protection, though none of the machinery of the law is in evidence. The office of the bureau is located away from other departments of the city administration and is practically as quiet and unobtrusive as a private home.

### The Star and Garter Hotel, on Richmond Hill, London, Given to British Red Cross Society

The members of the Auctioneers' and Estate Agents' Institute of the United Kingdom have purchased the Star and Garter Hotel for $107,500, and have presented it to the Queen as a permanent home for paralyzed and totally disabled sailors and soldiers. Her Majesty has transferred the buildings, terraces, gardens and grounds to the British Red Cross Society. The society has undertaken the responsibility of equipping and maintaining the institution.

Inasmuch as the Star and Garter has, for some years, been departing from hygienic efficiency, and in the light of experience with another large hotel in Belgravia, where thousands of pounds were spent in freeing the kitchens and basement from the cockroach, insect and rat curse, the editor of *The Hospital* is not certain whether to consider this hotel "a white elephant" or a gift.

# DISPENSARY AND OUT-PATIENT WORK

Conducted by MICHAEL M. DAVIS, Jr.,
*Director of the Boston Dispensary.*

## New York's New Health Center

The Commissioner of Health of New York City, so widely known in the hospital world, Dr. S. S. Goldwater, has established as a distinctive contribution to public health service his "Health District No. 1" in the heart of the lower East Side. His aim, as stated in the report of the first three months' work, was twofold:

I—To test the value of local administration of the functions of the health department, especially with a view to prevent overlapping of service.

II—The development of a community spirit with respect to health affairs in that district.

This experiment will be of great interest to all concerned with dispensary work as showing how activities in behalf of the public health can be coordinated and how a large organization such as the New York City Health Department might improve its service through emphasizing the principle of local administration for local purposes.

Quarters, including the basement and first floor of a five-story apartment house, were taken at 206 Madison street, and an area of twenty-one city blocks was marked out, taking in about sixty-three acres and some 35,000 inhabitants, most of them Russian or Austrian Jews. The rooms in the basement are used for the purposes of a milk station with a baby clinic, conference room, room for weighing the babies, and a dressing room. Upstairs the four rooms are used for the offices of the doctors, nurses and cooperating agencies, the record files and maps of the district, and charts, pictures and literature.

The field work undertaken from this center for this district includes the following: infant milk station, prenatal work, supervision of midwives and foundlings, medical school inspection, so-called "pre-school" examinations (children under school age), supervision of tuberculosis and of certain other infectious diseases, food inspection, sanitation and public health education through the distribution of literature, arrangement for lectures, and conferences in the Center or in halls in the district. "Healthgrams" are posted on a large bulletin board outside the building and are changed every week. The staff of the Center includes a health officer who is in administrative charge of all the work in the district; a medical inspector who provides the medical service for the milk station, medical school inspection and the examination of children between infancy and school age; three nurses and a nurse's assistant, a food inspector and a sanitary inspector. The health officer and the medical inspector give a considerable part of their time but not all their time; the food inspector about half his time, and the sanitary inspector gives one or two hours a day to work in the district. The various bureaus of the health department, such as child hygiene, preventable diseases, food inspection, sanitation, etc., send their supervisors into the district to see that the work for their respective bureaus is properly performed and held up to the technical standard of efficiency.

While one nurse has been detailed to supervise the infectious disease records, and another nurse is responsible for the conduct of the work in the milk station, yet all three nurses are performing routine service in the milk station clinic and in the schools during the morning hours. In the afternoon they perform the field service, each nurse being assigned a section of the district, making the necessary visits therein. These visits include those to milk stations and infants, follow-up visits to school children, midwives, foundlings, tuberculosis cases and other infectious diseases.

The experiment has proven the feasibility of having nurses perform an all-round public health nursing service, provided it is under the immediate control of a medical man, such as a health officer, in a relatively small district. The medical work should be supervised by medical officers and not by nurses. Furthermore, each district nurse will in time become familiar with the sanitary conditions of her territory and the health status of the families living therein. Several times a nurse has at one visit interviewed a family in which the father has tuberculosis, the child under observation for some physical defect and the mother with her baby is a patron at the milk station. The district nurse viewing thus the family and its environment learns the close relation of health and social conditions. Formerly, each one of these people would be visited by a different nurse, which was not only an annoyance to the family, but involved an overlapping of service, which should be eliminated. Living in this district are children going to schools, which, in the former distribution of school groups, were served by seven nurses.

Those interested in visiting nursing service or in hospital social service will follow the succeeding analysis eagerly, noting the extent to which the same nurses fulfill more than one health function:

ANALYSIS OF NURSES' VISITS

By staff of 3 nurses; 2,280 visits in 1,475 houses
In 991 houses 1 health function was served at 1 visit
In 301 houses 2 health functions were served at 1 visit
In 106 houses 3 health functions were served at 1 visit
In 44 houses 4 health functions were served at 1 visit
In 19 houses 5 health functions were served at 1 visit
In 14 houses 6 or more health functions were served at 1 visit

Total, 1,475 houses

The following analysis of the nursing service is also interesting. Calculating all work performed for any function, school medical inspection required the greatest portion of the time of the nurses, with the milk station work next. Infectious disease service would have been greater than 16 per cent had the time required to prepare reports and supervising records been included, but this item was charged against office duty or against milk station service. During March economy of time was effected by giving the task of supervising these records to the milk station nurse, who could do this in the first morning hour when clinic work was very light. This si another instance of how time can be saved by the district plan.

Analysis of the field work shows about 50 per cent of the time was devoted to infectious disease visits because at this season of the year this service is comparatively heavy. In the summer months the infants' welfare work will probably consume the greatest amount of field time.

While the work of the first three months is necessarily only a beginning and results cannot yet be announced, the Health Center report summarizes the following points which are believed to have been already demonstrated through this experiment:

1. To the inhabitants of the district the work of the

health department has become concrete; the district office is recognized as a place to which they can come for guidance in public health matters.

2. The entire district staff develops an interest in and a knowledge of the general health of the community, surpassing present methods by bureaus.

3. Many inter-bureau affairs can be adjusted directly at the district office without the delay involved in their reference to general headquarters.

4. Local direction by a health officer permits distribution of service according to district needs.

5. The cooperation between the medical and the nursing service is improved and secures better results.

6. Nurses working together in a common field develop greater enthusiasm and interest in health work.

7. Nurses can be trained to perform satisfactorily, an all-round health service.

8. The nursing staff is elastic, that is, it can be concentrated on infant welfare, schools, infectious diseases or other service, as conditions or seasons of the year demand.

9. The interest of the people in the exhibits and the literature shows the possibilities of a systematic health education campaign.

10. Civic organizations and public-spirited individuals are ready to aid the health department in developing a community health program.

Those interested in general dispensary work, or in special dispensaries for babies, tuberculosis, etc., will do well to secure a copy of the Report on Health District No. 1, which may be obtained from the secretary of the Department of Health, Walker and Center streets, New York City.

### Tuberculosis Clinics for the Middle Classes

The *Journal of Outdoor Life* for July, 1915, the organ of the Anti-Tuberculosis Campaign, published an editorial on "Pay Clinics for Tuberculosis." Referring to the evening pay clinics established for certain diseases, such as eye diseases and venereal diseases, the editorial says that this is most significant for anti-tuberculosis workers, in that it suggests a similar line of approach to a very difficult problem.

One of the most difficult groups of cases which the anti-tuberculosis worker, has to handle is that group which is commonly miscalled the respectable middle class, consisting of the wage-earners who are getting salaries ranging from about $15 to $25 per week up to about $2,000 per year. Patients in this group, when they become afflicted with tuberculosis, hesitate to go to a strictly charitable institution, whether they are obliged to pauperize themselves or not. On the other hand, they are generally unable to pay for the cost of maintenance at a private commercial sanatorium, which is compelled, as a business necessity, to charge rates ranging from $15 to $50 per week. The alternative is the comparatively small group of semi-philanthropic institutions, such as the Adirondack Cottage Sanitarium, the Loomis Annex, Agnes Memorial Sanatorium and Sharon or Stony Wold Sanatorium for Women. These institutions charge moderate rates, ranging from $7 to $12 per week, and are compelled on this account to solicit the difference between these sums and the actual cost of maintenance in contributions from the general public. The number of such institutions, however, is woefully inadequate to care for the class of patients who wish to go there.

A similar difficulty exists with reference to medical care and attention in the home. The patient who has absolutely no resources does not hesitate, when the way has been pointed out to him, to go to a clinic and be examined without charge. The patient who is earning a moderate wage, on the other hand, and who is able in some cases to afford a family physician, is loath to go to an institution where he feels it is lowering his self-respect. If he could go to a dispensary and pay a moderate amount within the limits of his income, he would not hesitate to do so.

In connection with the evening pay clinics established at the Boston Dispensary, it was found that there were four general lines of facilities available to the class of patients reached. These four lines of facilities are equally available to the tuberculosis patient and they are: (1) private medical practice; (2) hospitals and dispensaries; (3) irregular medical practice, including advertising experts, quacks, "institutes," etc.; and (4) self-treatment by use of drugs which the patient buys through mail solicitation or in response to advertisements from the corner drug store. The tuberculosis patient of the class to which reference has been made cannot, under all circumstances, afford the regular fees of specialists in tuberculosis and he refuses to go to a dispensary. If, as is frequently the case, the family physician is incompetent to diagnose or treat the tuberculosis which the patient develops, the patient gradually sinks to that condition where ultimately he is forced to accept either the charity of the community as a whole, or the generosity of his friends.

For this group of patients a pay clinic, where the ambulant cases could be examined at regular intervals, with a group of pay nurses who could visit the homes frequently, would be most desirable.

The fees which the patients pay at the clinic and to the nurses or physicians at home should not exceed those for an ordinary visit of a family practitioner in a small city, say about $1.00 per visit, and possibly, where the visits are frequent and extended, not more than 50 cents.

The experience of the Boston Dispensary has demonstrated three things: first of all, that pay clinics can be made self-supporting; secondly, that there is a real demand for this kind of service; and thirdly, that if the service is rightly organized, little or no opposition on the part of the medical profession will be provoked. Whether this experience in the special group of diseases tried out in Boston will be applicable to tuberculosis remains to be seen. The *Journal of the Outdoor Life* makes this suggestion, however, in the hope that some anti-tuberculosis associations will have the daring to try it out.

### The Bible and the Doctors

The book of Chronicles is rather severe on the doctors. It says:

"And Asa, in the thirty and ninth year of his reign, was diseased in his feet, until his disease was exceeding great; yet in his disease he sought not to the Lord, but to the physicians. And Asa slept with his fathers."

In Ecclesiastes, on the contrary, is a more encouraging opinion:

"Honor the physician for the need thou hast of him; for the Most High hath created him. The skill of the physician shall lift up his head and in the sight of great men he shall be praised. The Most High hath created medicines out of the earth and a wise man shall not abhor them."

Then, however, comes another blow:

"He that sinneth before his maker shall fall into the hands of his physician."—*Harper's Weekly.*

The Illinois State Board of Administration in conference with Dr. C. St. Clair Drake has been seriously considering the fixing of standards for maternity hospitals. A systematic inspection of these institutions has been undertaken by the board.

# LETTERS FROM OUR FIELD EDITORS

## News From the Pennsylvania Field

### NEW AMBULANCE

The city of Doylestown was presented with a beautiful ambulance in memory of Dr. O. P. James, a former eminent practitioner of Bucks county, by his daughters, Miss Sara H. James and Mrs. George H. Lorah.

### RESEARCH LABORATORY ENDOWED

The Allegheny General Hospital, of Pittsburgh, has been the recipient of an endowment of $400,000 for the construction, equipment and upkeep of a laboratory for scientific research. The donors of this useful gift are the children of William H. Singer, of that city.

### BACTERIOLOGIST HONORED

Dr. John A. Kolmer, of the University of Pennsylvania, who has given so much of his time to the study of contagious diseases and who is now chief bacteriologist and pathologist at the Municipal Hospital of Philadelphia, had the degree of Master of Science conferred upon him by Villa Nova College at the last commencement in June.

### INVESTIGATION OF OCCUPATIONAL DISEASES

The United States Public Health Service has detailed Dr. Joseph W. Schereschewsky to assume charge of the Marine Hospital at Pittsburgh for the purpose of making a complete investigation of those occupational diseases most common to miners and the manufacturing establishments of that locality.

For the purpose of pursuing this work Dr. Schereschewsky, who has already contributed many scientific reports to the service, will be given five assistants, and the investigation will include the physical examination of workers, and the chemical, physiologic, and bacteriological study of the diseases encountered.

Special efforts will be made to determine the effects of heat and light on mill workers by the action of infra-radiation, which has been already stated to be the cause of glass-worker's cataract.

### ANOTHER LEPER HOUNDED

The necessity for the establishment of a leper hospital in this country, as advocated by the United States Public Health Service, is again strongly emphasized by the treatment accorded in Wilkes-Barre to one Joseph Norman, who was declared a leper, and since that time has been under strict quarantine.

As though this man were a wild, ferocious animal, he has been enclosed, by order of the city commission, within a small area bounded by an eight-foot fence. It is almost inconceivable that in this age any human being should be so treated by his fellowmen, and such treatment is a reflection upon the intelligence of the community.

### PUBLIC SCHOOLS TEACH HEALTH RULES

The public schools of Philadelphia, beginning this session, propose to suspend the teaching of physiology for the purpose of substituting therefor a course in public health, and at the end of the term a test will be made to determine not how much the children know, but how their knowledge has been effectually applied in building up their own bodies and correcting unsanitary home conditions. The new course is elementary, and nothing will be taught that cannot be immediately applied.

### TYPHOID FEVER PREVALENT

As is usual at this time of year when children are returning from vacations, picnics, etc., there have been reported a great many cases of typhoid fever in the city during the last few weeks. Up the state, at Pittston, an unusually large number of cases have been discovered, and it is said that that epidemic has been traced to the milk and water supply. At the Danville Hospital for the Insane there are said to be about twenty cases of typhoid fever among the patients and nurses. As both the milk and water, after very careful investigation, have been declared pure, it is believed that a carrier is the cause of the disease, and efforts are being made to discover the person.

### ANNUAL STATE MEDICAL CONVENTION

The Medical Society of the State of Pennsylvania held its 65th annual session at the Bellevue-Stratford Hotel, Philadelphia, from September 20 to 23. Elaborate preparations were made for the entertainment of the guests, and a most excellent scientific program was provided.

### PHYSICAL EXAMINATION FOR WAITERS

The Department of Health of Philadelphia has announced that beginning January 1, 1916, every worker in a restaurant or hotel will be compelled to undergo a physical examination to determine his or her freedom from infectious diseases. This examination is in conformity with an act of the legislature passed at the last session.

### DEPARTMENT OF HEALTH CHANGES

After several years of sparring between city councils and the Department of Health, the new housing division of the Bureau of Health has been at last organized by Director Ziegler, and appointments to all the positions created by the legislature have been filled except several that must await civil service examinations.

### CHILDREN'S HOSPITAL CAMPAIGN

The Children's Hospital, of Philadelphia, announces that it will commence a half-million-dollar campaign during the month of October for the purpose of obtaining the necessary funds to complete the new hospital, which is now in course of construction. The new out-patient building is about completed, but until more funds are at hand further progress cannot be made. It is hoped that the campaign will solve all the financial difficulties.

W. H. Walsh.

## News of Rocky Mountain Hospitals

In our last letter we spoke of the increasing demand for a larger and more suitable building for the Children's Hospital of Denver.

We are pleased to note here that the new building which the Board of Directors of this hospital have had under consideration is now very nearly a reality, owing to the hard work of all interested in this institution and the never-failing generosity of the citizens of Denver.

In July a campaign was carried on in behalf of the Children's Hospital, the purpose being to realize $250,000 in twelve days. During these times of war this seemed almost impossible, but nevertheless it was accomplished. The campaign was carried on systematically, and all who

were able to give even a small amount were more than glad to do so to help in the relief of the sufferings of little children.

We also spoke in our last letter of the general and insistent demand on the part of the medical profession of Denver for the erection of an up-to-date medical building to take the place of the old one now occupied by the City and County Hospital of Denver. A bond issue of half a million dollars for this purpose was voted on by the Denver taxpayers at the last election. However, owing to the fact that so many bond propositions were presented at the same time they were all defeated.

The Sanatorium of the Modern Woodmen of America, located near Colorado Springs, is constructing a new administration building.

The Fortieth Annual Report of St. Joseph's Hospital of Denver is exceedingly interesting and very attractively compiled. We are sending this report from which you may cull such "news data" as you see fit.

M. Collins, M. D.

## MILWAUKEE OPENS NEW $600,000 SANATORIUM

### Plant of Strictly Modern Construction Has Accommodations for 285 Patients

Milwaukee's new county tuberculosis sanatorium, erected at Wauwatosa, a suburb of Milwaukee, at a cost of $600,000, is expected to be ready to receive patients October 1. The institution will be known as "Muirdale," having been named for John Muir, the Wisconsin naturalist.

The plant of the sanatorium consists of an administration and infirmary building, three stories high, with accommodations for 205 patients, two cottages with a capacity of 40 patients each, a superintendent's residence, a home for male employees, a home for female employees, a home for the assistant superintendent and interns, and a power plant.

The interior of the infirmary is of white enamel. There is not a dark corner in the building, and sunshine and light penetrate to all parts of the building. The corners of the rooms and corridors are beveled, so that there is no crevice into which dust or dirt can accumulate. The windows are of astral design, so that only 5 percent of air is prevented from entering the building. In the center of the building and on both sides are the sun parlors, divided by glass folding door partitions to prevent drafts. Windows run from the floors to the ceilings. The floors are tiled and the corridors are bisected by doors every four or five feet, making access as convenient as possible.

Large dormitories run through the entire building. Not more than six patients will be allowed to sleep in them. Other rooms will accommodate four patients, while those in advanced stages will have individual sleeping rooms on the third floor. The building is situated on the highest part of the fifty acres of land surrounding the institution and presents a beautiful view. A large lake is being constructed below the buildings for the pleasure of patients in the summer time. The bed of the lake is artificial and it is supplied by natural springs of water.

The institution will be in charge of a new central board of five trustees, which has charge of all county institutions. Dr. G. L. Bellis is the superintendent. Dr. Bellis was formerly head physician at the Cook County Hospital, Chicago, and assistant superintendent of the Wisconsin State Sanatorium at Wales.

Construction work on an addition to the hospital of the Indiana Soldiers' Home at Lafayette will be started soon.

# QUERIES AND ANSWERS

### Wet Versus Dry Sterilization

To the Editor of The Modern Hospital:

The old question of "dry" versus "wet" sterilization of rubber gloves has come up in our hospital, and we are wondering whether there is anything new in hospital practice that has been developed within the past two or three years that would make us think of changing from "wet" to "dry" sterilization. A Surgical Nurse.

There is nothing that we know of that has developed in the last two or three years that would cause you to change from wet to dry sterilization of rubber gloves. We still think that gloves sterilized by the wet process, that is, steam or boiling water, will wear longer than if the far higher temperature were employed in dry sterilization. You undoubtedly understand thoroughly the method of wet and dry sterilization and there is no reason to go into that.

### Slow Burning Hospital Construction

To the Editor of The Modern Hospital:

We have money enough to build a new hospital of forty beds if we build of what the architect calls strictly fireproof construction; or we have money enough to build a sixty-bed hospital if we can use what our architect calls "slow burning" material. We have a worked-over frame dwelling house, which we now occupy with our 25 beds. What does The Modern Hospital think we should do?

T. W. M., Ohio.

You should by all means build your forty beds of strictly fireproof construction and continue to use your old hospital of 25 beds as an annex until you can afford to take it down and add a new wing, which should also be of strictly fireproof material. You have no right to hazard the safety of patients by admitting them to a fire trap, and anything short of absolutely fireproof construction is a fire trap, where sick people are concerned.

It is pardonable, though not advisable, to continue the use of your present old building until you can afford to tear it down and build a new; in fact, that is exactly what you are doing now. It is unfortunate that you are obliged to do so, but it is merely unfortunate; it would be a crime to build a new building of this sort of material.

### Division of Intern Work

To the Editor of The Modern Hospital:

We have four interns, and there are constant wrangles about who shall do what; very often when an intern is called on to do a certain thing he refuses, claiming that it is not his work, and each intern seems to think he can make his own rule to fit each case. The doctors are constantly finding fault because their work isn't done, and the interns think they are the most abused mortals in the world; how can we arrange things so these frictions and misunderstandings will cease? Superintendent.

Nearly every hospital now has definite rules for the conduct of its interns, and the work of the hospital is divided under these rules so that each man knows exactly what is expected of him. The details of rules must be

made for each hospital, because conditions differ; the division of services has a little to do with it as well as the number of interns and the character of work that the hospital does. If you have no such rules you should get your medical staff to help you create them. THE MODERN HOSPITAL will be glad to send you a general form if you have none available, and you and your medical staff can make such changes as will meet your particular requirement. After you get your rules, have them passed by the medical staff and by the board of trustees, and then it will be your duty as superintendent to see that they are lived up to.

There will always be trouble about the work of the interns unless there are definite and enforceable rules for their guidance, and rules will be of no earthly account unless the interns are compelled to obey them. You had better start your new set of rules, if possible, when your new men come in, in the spring, because if they are now running without rules, it will be extremely difficult to enforce new ones in the middle of the service of a group of men, and usually the installation of a new set of rules means the dismissal of one or more interns for disobedience.

### Pupils on "Special"

To the Editor of THE MODERN HOSPITAL:

How much total time during her three years' course does THE MODERN HOSPITAL think a pupil should, with fairness to all concerned, be assigned to "special" in the hospital on private cases, for which the hospital collects a fee of $15.00 per week? And at what stage of her career should she "special"? Our pupils have been assigned to "special" for only short periods, a week or two at a time, and perhaps two or three times during their junior year, not much more during the intermediate, and about half their time during their senior year.

A TRAINING SCHOOL PRINCIPAL.

You should not "special" your pupil nurses during their junior year and charge patients for their services; young women at that stage of their training are not equipped for this work, and it is almost taking money under false pretenses for you to charge patients for their service. The same thing is almost true of intermediate class pupils, although we think it good practice for second-year pupils to be given as direct charge of individual patients, under proper direction, as possible; but intermediates should "special" in the wards, where they can be constantly under the direction of the head nurse, and not in the private rooms.

One-half the time of a senior pupil nurse seems a great deal for "special" work; we know it is done, but it is to be doubted whether even those who practice this method would contend that it is in the interest of the pupil. Of course, it is in the interest of the hospital to "special" as many of its pupil nurses as it can, in order to earn the money; but it does seem that if, say, three months out of the twelve of a senior pupil's year is given to "special" service, that would be enough.

There is a certain advantage in having senior pupils on "special" in the hospital rather than outside graduate nurses. Graduate nurses resent the direction of the head nurses in the hospital and insist on running their cases, subject only to the doctor's orders; and often these orders do not cover the ordinary administrative technic with patients; hence graduate nurses are left pretty much to themselves, and after a short time they get away from the technic of the hospital and are disposed to establish a technic of their own—a practice subversive of discipline, against the best interests of the patients, provided the hospital's technic is any good, and tends to create in the hospital, and especially in the training school, a feeling that technic does not amount to much anyway.

When graduates come into the hospital on special duty they should be compelled to live up to the rules of the institution, literally and exactly, and refusing to do so, they should be refused work in the institution.

### Outside Doctors in the Hospital

To the Editor of THE MODERN HOSPITAL:

Do you think the hospital should permit doctors having private cases in the maternity department to bring in their own nurses from the outside to "run" their labor cases? One or two doctors, who are not on the hospital staff, insist on doing so, and while we have protested, we have allowed it; recently we got a bad infection in one of these cases and the doctor blames the hospital, while we are quite sure it was due to the unscientific work of the outside nurse, coupled with sloppy obstetrics on the part of the doctor, who refuses to use gloves.

A GENERAL HOSPITAL.

You are correct in the stand you took in the first instance, and should never give way on the question of allowing outside nurses to run cases in your obstetrical department. The thing that has happened to you will happen again, and yet the hospital cannot absolve itself from responsibility for unwarranted infections in its operative departments. If the fact that you allowed an infection to get into your obstetrical department should leak out into the community it would hurt your service immeasurably, and would do your hospital far more harm than it would do the doctor whose patient was involved, or the outside nurse who took care of the patient. That fact seems to give the hospital a very vital interest in the integrity of its obstetrical service; and the hospital can never divide its responsibility for an untoward happening of that sort; therefore, why should the hospital permit either doctors or nurses to practice a technic that it does not approve or to perform service in the hospital, even on their own private patients, without a proper technic?

Some very good obstetricians, in very good hospitals, sometimes like their own nurses to run their private cases, provided the nurse has been trained in that particular hospital, and the doctor himself works under its technic; but even under these circumstances a private duty nurse, running a case in the obstetrical department, is a good deal of a nuisance and generally messes up things. She wants everybody waiting on her, wants the best of everything there is, and if permitted to do so will have the whole department upset over her case. So that it is much better for the head nurse of the department, with her own assistants, to run every labor case and then turn the case over to the private nurse after everything is over, including necessary attention to the infant.

By the way, you may make a little money and incur the friendship of an outside doctor who refuses to wear gloves and abide by your technic, but in the long run you hurt your hospital and do an injustice to your own well trained medical men in offering any encouragement in the community to the employment of an out-of-date, ill trained and untechnical operator. The idea is, that if a good hospital, which yours is supposed to be, refuses its facilities to a doctor in the community it will not take very long for the community to want to know the reason why, and when such reason is given, as you could give in the case like that above cited, it will not take the community long to find out that there are other doctors available who could give them better service, and that attitude of the community will be in the interest of the competent staff members of your hospital.

The State School for the Deaf and Blind at St. Augustine, Fla., is erecting a hospital building.

# NEW INSTRUMENTS AND APPLIANCES

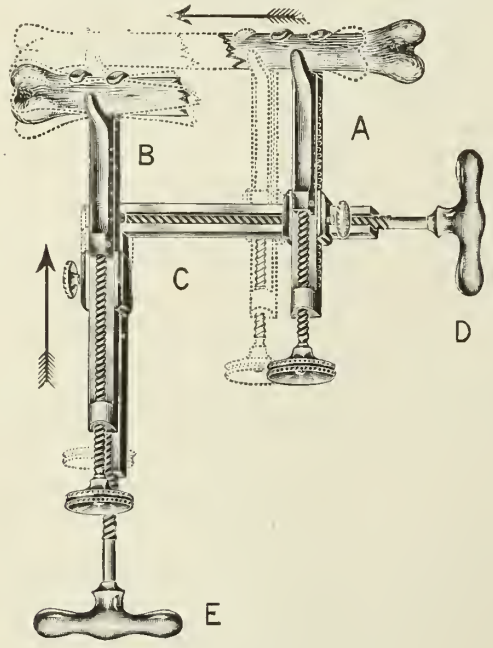
VINCENZ MUELLER, Technical Editor.
GEO. W. WALLERICH, Associate Editor.

## Apparatus for Fractured Bones

BY WM. E. SCHROEDER, M. D.,
Chicago.

The instrument consists principally of three parts—an L-shaped arm, C, the two branches of which carry two carriages and two bone clamps. The removable carriages, D and E, are movable in two directions, one laterally and the other away from or toward the operator, as may be required. Mounted on the two carriages are two strong and adjustable bone clamps, which are modifications of the well-known Lowman clamp.

The illustration shows quite clearly the method employed in bringing the bone ends into apposition. The two fragments are grasped by the clamps, A and B, these




Schroeder Universal bone-clamp.

clamps then being attached to their respective carriages and held fast by means of heavy screws. Numerous anchoring points in the side of the clamps permit the thumbscrew to hold the clamps firmly with but little exertion on the part of the operator. By means of a worm gear actuated by hand grips each carriage, with the clamp attached, can be moved. Thus the bones can be brought into alignment whether they override or not, and in whatever position they may be. Immense traction can thus be had with very little effort, and once the parts are adjusted, they are held firmly together until plates, splints or grafts are applied or inserted. The instrument is made entirely of steel and can be taken apart easily for sterilization.

## The Ziola-Jackson X-Ray Apparatus

The present extension of electrical service to even the smallest villages and hamlets has made the use of the x-ray tube possible to every physician and surgeon whose work calls for auxiliary assistance in this direction. In times past the installation of an x-ray tube, where coils, static machines, and kindred apparatus had to be depended upon, has meant excessive first cost, enormous maintenance costs, and extremely unsatisfactory service. The universal extension of electrical service has put the use of the tube on a new and better basis, a basis of comparatively low first cost, low maintenance, easy operation, and extremely satisfactory results. Under such advantageous conditions the range of use has been tremendously increased.

The commercial machines at present all embody the same fundamental principles of voltage and current trans-

Switchboard of Ziola-Jackson transformer.

formation from some commercial supply values to values required by the tube under all conditions of operation.

The x-ray tube requires a unidirectional current of high voltage and low amperage. The ordinary electrical service available to the hospital building is at potentials of 110 or 220 volts, and may be either direct or alternating current. The electrical apparatus that is most successful must be the simplest possible for the transformation of that current, direct or alternating, at low voltages, to direct current at very high potentials. The general principle is to supply a transformer with alternating current at low voltage, to rectify the transformer high-potential current to direct current, and to connect the power under these conditions to the tube through suitable controlling and regulating apparatus. The entire plant for current supply to the x-ray tube consists, where direct current is available, of a rotary converter, transformer, rectifier, and control apparatus. Where alternating current is available, the rotary converter is eliminated and a synchronous motor is used.

If alternating current is available no conversion is necessary before the current is supplied to the transformer, but if the supply is direct current, it is necessary to change this over into alternating current before connecting it to the transformer. Two schemes have been used for this conversion, both of which are in use today.

These two methods are the use of an inverted rotary converter, and the use of two machines, a direct current motor driving an alternating current generator. The rotary converter is in fact a special case of the two-machine method, where the two machines are combined into one.

The transformer used in the Ziola-Jackson apparatus is of the closed core type. The rectifier is mounted on the shaft of the rotary converter in the direct current system. Where alternating current is the supply the rotary is unnecessary, and therefore some other driving power must be provided. This is the synchronous motor, which operates in parallel and rotates at a speed which bears a direct relation to the number of cycles in the transformer current, and therefore in combination with a properly designed rectifying device may be depended upon to produce a direct current of maximum value. The device in this apparatus is capable of adjustment in correspondence with the wave form of the supply current of the particular city where the apparatus is to be used.

The control apparatus consists of proper starting devices for the direct or alternating current machines, according to the system, a polarity indicator and reversing switch for use with the alternating current system, a stabilizer for regulation of the supply to the tube, a milliammeter for the measurement of the tube current, and a final master switch for connecting into the tube leads.

The starting device for direct current is automatic and is actuated by throwing in the line switch. This operation starts the converter and thus feeds current into the transformer to be rectified properly later. In the alternating current system, the starting of the motor is accomplished in the usual manner, with the four-pole, double-throw switch. This provides only for the operation of the rectifying device. The transformer must be connected in by means of a separate switch. In the alternating current system, the rectified current may or may not be in the desired direction, and its direction as indicated may be reversed if desired by the polarity switch.

The stabilizer used for the regulation of the current and voltage values is an exclusive feature of the machine. Its use eliminates the ordinary wire rheostat and the choke coil. Eighty-six steps in the regulation are provided by forty-three contacts, and the degree of adjustment is extremely fine.

The milliammeter is mounted on lead glass above the operator at the switchboard. The advantages of such mounting can be easily seen.

The entire apparatus is assembled in two groups, one of which is enclosed in a mahogany finish cabinet, and the other of which occupies a steel and marble switchboard. The cabinet contains the transformer, mounted near the floor; the motor or converter, mounted directly upon the transformer; and the rectifying device. The stabilizer is entirely enclosed in steel, making it absolutely fireproof. The entire switchboard is on rollers in order to allow the operator to move it easily to any part of the room. A flexible cord connects the two groups electrically.

The recognition of the perfected design of the rotary converter, with subsequent elimination of its former disadvantages, was the first step toward the perfected machine.

## Apparatus for the Administration of Warm Ether Vapor

BY DR. J. W. SNYDER,
Michigan City, Ind.

The apparatus devised by Dr. Snyder consists of two parts only: The well known wire mask and, attached to it, a dome-shaped metal casting, reaching part way down over the mask and the heating coil. The metal tube containing the electric heating coil may be quickly attached or removed from the mask by a slight turn to the right.

The coil, as may be seen from the illustration, is contained in a perforated metal shell and built for use on the regular 110-volt alternating current and so constructed that it will reach a maximum temperature and cannot become overheated even when connected for an indefinite time.

About twenty minutes before starting an anesthetic the coil is attached to the city current and the mask is prepared with layers of gauze. After the coil has reached the maximum heat it is connected to the mask, which is placed over the patient's face. The anesthesia proceeds then in the regular way except that the ether is dropped through the metal tube on the coil instead of on the gauze

Apparatus in use, showing thumb of left hand holding mask in position while the fingers support the jaw. The heavily insulated cord for connection to the city current is shown and also the manner in which ether is dropped through the coil.

direct, and from the coil it reaches the gauze in the consistency of warm vapor.

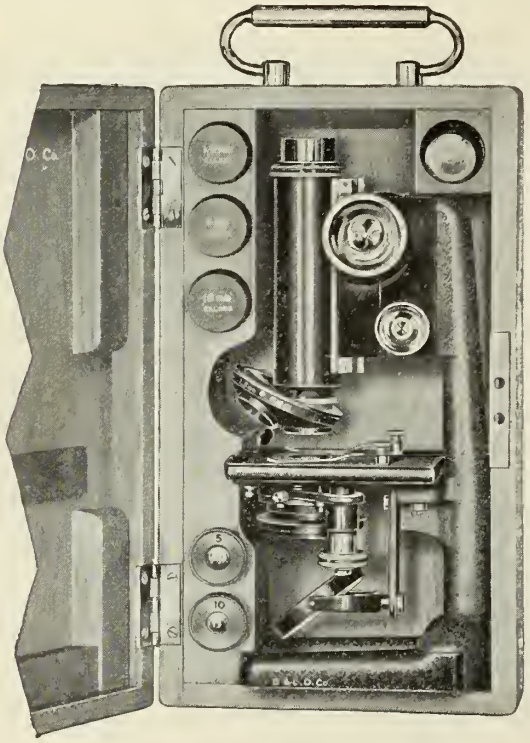
The ether is to be given more slowly and in smaller doses, inasmuch as it reaches the patient quicker than when it is dropped cold on the open mask. Consequently, the total amount of ether consumed during the course of an operation is only about one-half that used in the ordinary open method. The doctor claims that a number of other advantages result from the use of this device: the patients go to sleep more easily and without coughing or holding their breath; mucus is absent from the air passages, except in the extremely prolonged cases; anesthesia is easily maintained; patients are brighter upon awakening and post-operative nausea and vomiting are generally absent.

## An American Made Portable Microscope

The Director of the International Health Commission, West Indies Division, actuated by the need of a microscope that would be thoroughly portable and strong, yet capable of exact work, commissioned the makers to design an en-

tirely new instrument. The various instruments available had been tried, but none had been found suitable. The commission required a microscope that was really portable—a "camping outfit." But the work of the commission is of a most exacting nature, and the director is a thoroughgoing scientist and a practical microscopist as well. Hence, the very first requirement: "Efficiency is to be in no degree sacrificed to portability."

The new microscope is not of the "knock-down" type. The only collapsible feature about it is the folding base. The instrument is ready for use as it is taken from its case; it is only necessary to unfold the base and to add the objectives. The objective is the most precise part of a microscope, and a good objective is a beautiful example



An American made portable microscope.

of the optician's skill; yet it should be made so as with proper care to last a lifetime. It cannot be expected to do so, however, if subjected to the jolts and rough usage it is likely to receive on a portable microscope. For this reason the objectives of microscope APS, when not in use, are always carried in their metal cases, which fit into receptacles provided for them in the carrying case. It was thought that this arrangement would insure at all times the careful handling which a good microscope objective deserves.

The new portable instrument is provided with screw sub-stage and condenser, the usual three objectives, and two eye-pieces. The side fine focusing adjustment is of the lever type, with two micrometer heads. The action is positive and there is said to be no lost motion whatever. The arm is a handle type of new design, giving ample space for the manipulation of the object.

It is argued that this instrument, designed for use in a tropical climate and used for exacting work under the most trying conditions, will give even better service in the hands of the regular physician. It weighs but 9¼ pounds in its carrying case, which is less than one-half the size of a regular microscope case. Portable microscope APS makes an excellent instrument for bedside diagnosis. The designers point out that this is especially true by reason of another factor, viz., the cost of the instrument is no greater than that of the ordinary physician's microscope.

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### Heidbrink Anesthetic Apparatus

An appliance known as the Heidbrink automatic anesthetizer, designed by Dr. J. Heidbrink, of Minneapolis, has simplified and made possible the scientific administration of nitrous-oxygen-ether anesthesia. It was called to the attention of the medical profession in various parts of the country two years ago and has been used successfully in numerous hospitals since that time.

The mechanism of this machine is such that in addition to providing for an even flow of the gases, warming of the gases, rebreathing, etc., it delivers an unvarying dose when the indicators are set for producing anesthesia or analgesia. A uniform dose for adults having been determined to produce respectively anesthesia and analgesia, this machine allows the operator, even without previous practice, to administer the gases in exactly the proper proportions. With a less accurate appliance the anesthetist has to deal not only with the variation in susceptibility

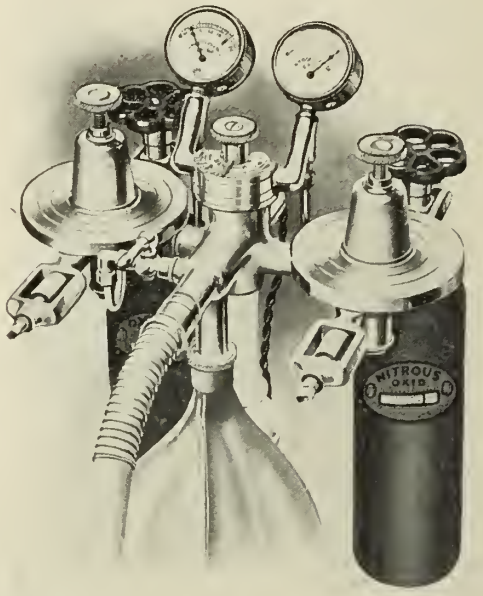



Fig. 1. Apparatus showing gauges set for producing anesthesia.

of his patients, but also with the variation in the dose. When the variation in the dose is eliminated, as by the Heidbrink machine, it is found that in a large majority of patients the variation in susceptibility is so slight that the dose as determined produces a satisfactory result without change. In exceptional cases slight variations in oxygen percentage can readily be made to meet the requirements of the patient.

The Heidbrink anesthetizer is ideal for producing "sunrise slumber" analgesia for painless childbirth, and the operator need not be familiar with nitrous-oxide-oxygen anesthesia to operate successfully the appliance for this purpose.

Another feature provided for by the Heidbrink machine is of special importance in tonsil and adenoid cases and other operations where the mouth is open. The center valve controls the opening through which the nitrous oxide flows and keeps the openings at all times in proper relation

Fig. 2. The Heidbrink face inhaler held in position.

to each other, so that when the flow is increased or diminished the character of the mixture is unchanged. This feature is of utmost importance especially in forcing the gases to compensate for mouth breathing.

In anesthetizing with the mouth of the patient open, usually the mouth must be covered during the induction period. As soon as the covering is removed, in order that the operation may begin, more or less mouth breathing results and the anesthesia may be lightened to an undesirable extent. With the Heidbrink machine, when anesthesia is induced and the character of mixture is found to accommodate the patient, the flow of the mixture may be increased to force it through the nose or the mouth tube without changing the character of mixture found to accommodate the patient.

The Heidbrink anesthetizer is the only apparatus which meets this requirement, and this feature alone has removed many of the difficulties ordinarily met with by beginners and experts as well, in procuring satisfactory results in prolonged anesthesia and analgesia.

The above described features make it easy to maintain an even anesthesia throughout a tonsil operation, whereas formerly it was most difficult.

Ether vapor, warmed, may be accurately introduced into the anesthetic mixture through the ether vaporizer. The construction of the ether vaporizer and its location on the appliance is such that the minimum amount of odor of ether is left in the tubing and bag after use, and can be flushed out with a little gas so as not to be objectionable to the following patient. The face inhaler is designed for the comfort of the anesthetist; while holding it in position the elbow rests on the operating table and the hand rests on the patient's forehead.

### Impermephane—A New Material for Surgical Use

A new material has recently been put on the market to take the place of oiled silk, oiled muslin or gutta-percha tissue for surgical dressings.

In view of the seemingly extravagant claims made in the literature the writer thought best first to have the facts demonstrated by test before reporting the material in this department. A quantity of Impermephane was placed in ether and left for three days. Upon careful examination there was no deterioration noticeable. The same material was then placed in a sterilizer and boiled for thirty minutes. Boiling failed to show any ill effects.

The claim is also made that the material does not deteriorate with age. Of course, it is impossible at this time to verify this claim, but if Impermephane does not deteriorate it would seem it has many advantages over other material which has previously been used for surgical dressings. The hospital superintendent is too often compelled to buy a new supply of gutta-percha tissue, at the same time discarding some which has become brittle before it is used. Impermephane is transparent, quite flexible and has no odor. The price is somewhat lower than many kinds of surgical dressings used in the same way. The material has been put on the market by Reid Brothers, of San Francisco, but we presume that it may be procured from any first-class surgical supply house. As the price seems to compare favorably with that of oiled silk, muslin or gutta-percha tissue, hospital superintendents will be quick to take advantage of the opportunity to give it a trial.

### Improved Operating Table with Adjustable Top

Operating tables which may be raised or lowered in order to facilitate the work of the operator by permitting the surgeon, as his work progresses, to raise or to lower the patient to a position in which the work can be carried on to the best advantage have become more and more popular in this country during the last two or three years.

A new model of this type of table has recently been constructed by the Scanlan-Morris Company, from suggestions given them by Dr. Balfour, of Rochester, Minn., and several of these tables have been in use for some time at the Mayo Clinic.

Fig. 1. Balfour operating table. Horizontal position.

Some of the main features of this new table are its rigidity, due mostly to the extra heavy base, and the ease by which all positions can be controlled by the anesthetist without leaving his position at the head of the table. The table top can be elevated, lowered and rotated. The Trendelenburg, as well as the reverse Trendelenburg position for goiter work, gland dissections, etc., are easily secured.

The foot piece of the table can be dropped at an angle of 45 degrees to table top or removed from the table entirely when so desired in gynecological work.

A body elevator is provided for use in nephrectomy, stomach work, etc. This is adjustable up and down and retains its adjustment without catch or cog. It is so

placed on the table as to permit of its being brought forward close to the head of the table, moved back to the center section or beyond, as may suit the operator's convenience. This elevator is also fitted with adjustable (removable) posts for holding patient in correct position.

The supports which hold the instrument rack are self-adjusting, thus keeping the instrument rack at all times in its proper relation with the operating table regardless of

Fig. 2. Balfour operating table. Trendelenburg position.

the change of position. Clamps for wristlets, also clamps for strapping the patient to the table, are provided. The shoulder crutches are adjustable, and modified Bierhoff knee crutches are so made as to support and hold the patient securely. All of these attachments are held in position by a narrow rail, which is attached to both sides of the table top and can consequently be adjusted at any place desired.

Pressure of the foot on the raising lever elevates the table top, while pressure on the releasing lever lowers the

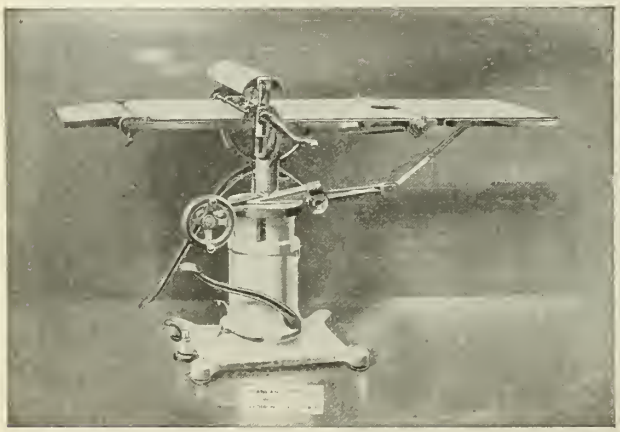


Fig. 3. Balfour operating table with body elevator in position.

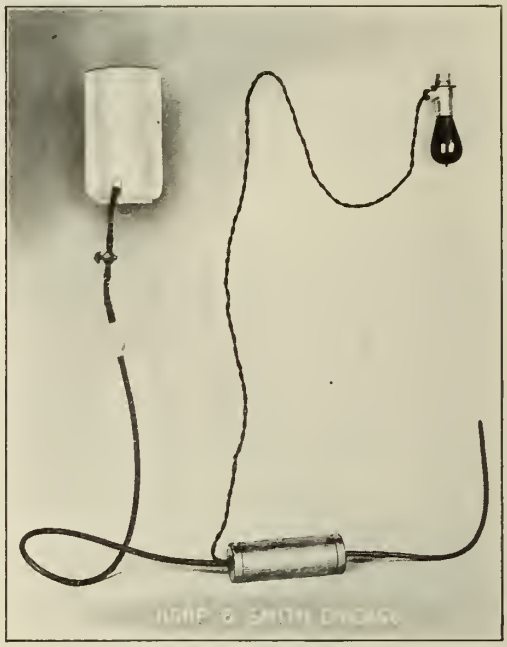
top, which is adjustable in height from 32 to 42 inches. The top is mounted on a telescopic casting fitted into an extra heavy cast pedestal, and elevation or lowering is accomplished by a smoothly working oil pump.

The pedestal supporting the table is mounted on sliding shoes, which permit the table to be moved without undue exertion. The entire top is made of so-called Benedict nickel, a highly polished, non-corrosive metal, which is impervious to such solutions as are used ordinarily in the operating room.

**Nylander Electric Saline Heater, for the Saline Solution in Proctoclysis Treatment**

This instrument consists of an attaching plug and silk covered connecting cord for attaching to the lighting circuit a pilot light to show that the heater is in operation, and a metal encased heating coil through the center of which passes the tube from the container to the patient.

It will accurately maintain the saline solution at a temperature of 98 to 105 degrees Fahrenheit. It seems to be the consensus of authoritative opinion that the best



Nylander electric saline heater.

results are obtained from giving saline solutions by the drop method (proctoclysis treatment) when the temperature of the solution is maintained at 98 to 105 degrees Fahrenheit.

It will not let the solution get above or below the required temperature. The saline solution does not come in contact with the heater. It is sanitary and requires no sterilizing. A turn of the switch sets it to work or stops it; it cannot be misused, as it has no delicate or moving parts and it cannot get out of order. Manufactured for Sharp and Smith, Chicago, Ill.

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**Medical Training for Women**

We quote the following from an appeal for funds to increase the facilities for the medical training of women recently issued by Earl Curzon, Mr. Asquith and Mr. Balfour:

"The war has constituted a turning point in the position of medical women, and there are new openings and new opportunities for them in many directions. Increasing numbers of women are desirous of entering the profession, and to provide for their adequate educational needs the London (Royal Free Hospital) School for Medicine for Women is now practically doubling its laboratory accommodation. The Council of the School has already received £15,000 of the £30,000 required for the additional buildings and their equipment."

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The Franciscan Sisters, in charge of the Sacred Heart Hospital, Eau Claire, Wis., recently celebrated the twenty-fifth anniversary of the establishment of that institution.

# THE HOSPITAL KITCHEN

Any questions regarding equipment or other matters connected with the kitchen and dependent departments of food storage and service will be answered in this department. Address communications to The Modern Hospital, Kitchen Department, Metropolitan Building, St. Louis.

## AN EFFICIENT ELECTRIC KITCHEN PLANT

### The Pennsylvania Hospital Makes Encouraging Report on Its Diet Kitchen Equipment—Hopes to Equip Main Kitchen

BY DANIEL D. TEST, Superintendent.

A letter of inquiry from the editor of THE MODERN HOSPITAL prompts me to give to the hospital people the results, up to date, of our installation in the Pennsylvania Hospital of electrical kitchen equipment.

Fig. 1. Diet kitchen, Pennsylvania Hospital. Electric range and broiler.

I do not feel that my experience would justify me in reaching any definite conclusions on this very interesting and very important subject; but I am quite willing to tell the readers of THE MODERN HOSPITAL of what our equipment consists, and some of our impressions concerning it.

We first installed a small electric range in our diet kitchen three years ago, but it was not until the first of the present year that this kitchen was completely equipped with electrical apparatus. This equipment consists of one large range, one broiler, one toaster and one tea-kettle, all manufactured by the General Electric Company.[1] The range has two large ovens and eight top, or cooking, plates. The oven capacity is quite equal to two ordinary coal ranges, and the top cooking space almost equal to two coal ranges. Each unit is under separate control, so that one unit or all the units can be used with equal convenience.

The price of this range is four hundred and fifty dollars, but the increased demand will probably reduce this price. Broilers can be purchased for from fifty to one hundred and fifty dollars—according to the size and type; this price will doubtless be reduced also. The manufacturers claim that the heating units, especially in the range, are practically indestructible and that the cost of repairs will be very low. This is yet to be proven.

More important than the initial cost and the possible cost of repairs, is the question of efficiency and the cost of maintenance.

As to efficiency, I believe electricity has already established its place in the realm of cooking It is more easily controlled and, I believe, is preferable in every way to gas or coal—whether it is top-stove cooking, baking, roasting or broiling. The question of the cost of current is the vital one, and one which I do not think has been definitely solved under all the various conditions which exist. With the equipment which I have mentioned above, we cook for twenty-six private patients; any members of the training school or hospital family who may be sick; and prepare all special diets for two hundred and seventy-five ward patients. I doubt, however, whether the special diets in the Pennsylvania Hospital amount to as much as in some others. Everything for the private patients is done in this kitchen excepting the baking of bread, and this is offset by the baking of "special" bread for special diets.

The amount of current required to do this work has averaged forty kilowatt hours per day. Thirty-two kilowatt hours is the smallest day's consumption and sixty-five the largest. Baking and roasting would partially account for this difference. The current has been measured on a meter especially constructed and very sensitive.

The question of cost depends largely, of course, upon

[1] I hesitate to mention the manufacturer's name, as I do not want to seem to be advertising any special firm; but this would probably be one of the first questions asked by the reader.

Fig. 2. Diet kitchen, Pennsylvania Hospital. Electric range.

whether or not one can utilize all, or part, of the exhaust steam. Before installing our present equipment, we already carried a load which produced more exhaust steam than we can utilize during four months of the year. Therefore, during this time we must charge to cooking the cost of producing the electricity when the exhaust steam is wasted.

A scientific man would apportion the total output of his steam plant with the total expense, but as we already had a fixed overhead charge and certain running charges, we tried to get at the extra expense of the cooking by determining, as best we could, the cost in fuel to produce the current used, the interest on the investment and the wear and tear of apparatus.[2]

The cost, in fuel, of producing a kilowatt hour of electricity in the average small plant is a debated question, and surely must vary somewhat in different plants and in different parts of the country.

We are now installing scientific apparatus in our boiler plant, which I hope will enable us to determine accurately this cost in our plant; but the figures I will give are based on the report of the average cost in fuel of a kilowatt hour in commercial lighting plants, in size from one hundred to five hundred kilowatts. The Pennsylvania Hospital plant would class with these.

This average would indicate a cost for us of one and six-tenths cents per kilowatt hour. The actual cost is probably somewhat above this. If these figures are correct, we are spending less than seventy-five cents a day in fuel in our diet kitchen during the time of wasting our exhaust steam.

During eight months of the year, when we can utilize the exhaust steam for heating purposes, the cost must be much lower than this; and, if the results of investigation on this subject are correct, the cost of electricity under these conditions must be very inconsiderable.

I am informed by scientific engineers that out of four hundred and forty-five heat units in steam under one hundred pounds pressure, four hundred and thirty-five units remain in the exhaust steam as it comes from the engine. This being true (and from my own experience I believe it is, at least, approximately true), the cost of the fuel for electric cooking during much of the year must be very little.

It has been definitely established in Philadelphia that the cooking for a large institution can be done by gas[3] at one dollar per thousand feet, as cheaply as by anthracite coal at the prevailing price. The question which is uppermost now seems to be the relative cost of gas and electricity. The manufacturers of electrical cooking apparatus claim that electricity at two and one-half cents a kilowatt hour is as cheap as gas at one dollar per thousand feet.

We propose shortly to instal also a gas range in our diet kitchen in order to make careful comparison, and I hope to feel more sure of my position in the months to come. However, I am free to confess that I am enthusiastic in the matter of electric cooking, and I am already dreaming of the day, and not a far distant one, when we will have our main kitchen electrically equipped. I realize, however, that experience may prove this to be impracticable; but when we realize that one manufacturer sold over three thousand electric ranges last year in the United States, and mostly to persons who have to buy their current, the question seems to be one well worth investigation.

It may be interesting to your readers to know that the kitchen of the Bethlehem Steel Company, of Bethlehem, Pennsylvania, is equipped entirely with electric ranges, broilers, etc. This kitchen feeds five hundred persons and there is perhaps no kitchen in the country more scientifically operated.

Your readers may also be interested to know that four years ago we installed electric radiators in eight rooms which are used by employees and the location of which made the running of steam pipes difficult. The results have been very gratifying. The system is controlled by the engineer and the current is turned on in time to warm the rooms for the evening. At ten o'clock it is cut off and turned on again in the morning long enough to take the chill off the room before the occupant gets up.

The results which were obtained at the Pennsylvania Hospital when an electric plant was first installed fifteen

[2]Time only can tell what this last will be.

[3]Unless the use of the gas is closely watched, however, it will cost much more than coal.

Fig. 3. Diet kitchen, Pennsylvania Hospital. Cupboard corner.

years ago may be interesting to those who are undecided whether or not an individual plant is a paying investment, and may throw some light on the question of the cost of producing electricity in such a plant.

The first year thirty-five hundred dollars were saved in lighting alone; and our lighting was much more efficient, as two sixteen candle-power lamps were used where only one gas jet had been used.

During this year we burned only thirty tons of coal more than the year previous, and as the annual consumption was thirty-five hundred tons, this variation might easily have occurred without the addition of the electric generators. During this time the same grade of coal was used as the year previous and at the same price, the plant was under the care of the same engineer and the mean outside temperature of the six months, October 15 to April 15, was one-fourth of one degree lower.

This would seem to justify the contention that the cost of producing electricity is very little when the exhaust steam can be utilized.

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### Kitchen Plan for a Hospital of 150 to 200 Beds

BY P. B. SCHWEIKERT.

The plan herewith shows the minimum equipment necessary to operate economically the kitchen of a hospital of 150 beds. In order to expand it to care for 250 beds, the only additions necessary are two more sections of range, another steam kettle and one more compartment steamer.

It is presumed that the dishwashing will be done in the serving rooms, hence no dishwashing machine is shown on the plan in the kitchen.

Contrary to a common practice, the storeroom contains only storage refrigerators, bins and shelves; the meat block, cutting bench and sink, which are often put in close juxtaposition to the meat refrigerator in the storeroom, are placed in a separate room, which also contains all the mechanical appliances.

The handling of meat in the storeroom is a sloppy operation, and it is better done away from it and outside the kitchen; hence the placing of this department in the preparing room.

Placing the vegetable peeler, ice cream freezer, ice crusher and meat chopper together enables one motor with line shaft to take care of all of them. An installation of this character has just recently been put in the Youngstown City Hospital, and Mr. Bunn, the superintendent, expresses himself as being entirely satisfied with it.

Three sections of center range with three ovens and a broiler occupy the center of the kitchen; also a three compartment steamer and a steam kettle. The whole is covered by a canopy which conveys the heat and gases to a ventilating flue 40x28 inches in size, the smoke being conveyed to a separate flue which should not be less than 200 square inches in area, so as to accommodate extra sections if necessary.

One side of the kitchen is devoted to preparation and cleaning. It contains a cook's table with pan rack above; opposite this are the vegetable sinks and table, the dish sinks and table and pan sink and table.

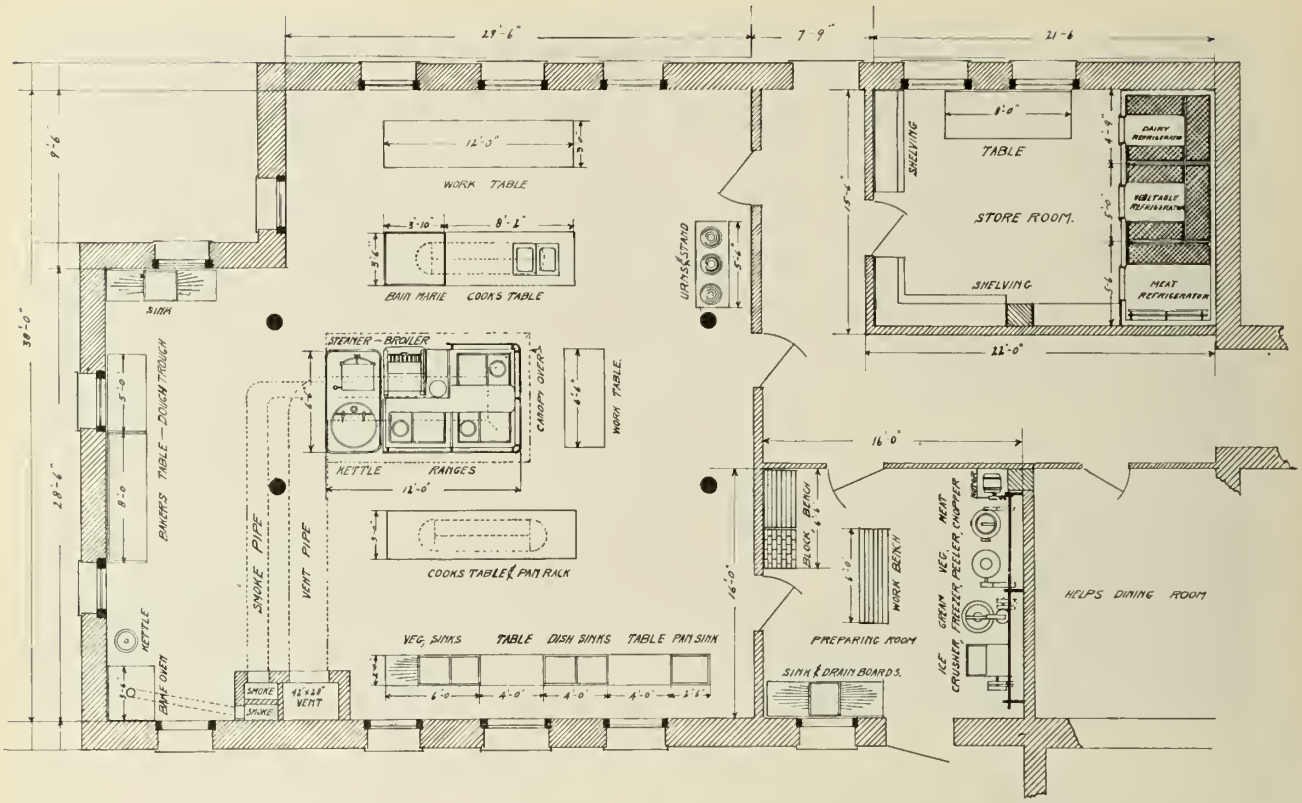
Sinks are placed away from the walls so as to enable cleaning to be taken care of properly.

On the opposite side of the kitchen is located a cook's table containing a large bain marie and meat panels; this table also has a pan rack above it.

A large work table is also provided away from the wall and accessible on both sides. This is primarily intended for the convenient handling of the food boxes before being put into the wagons. The intention is that the food wagons shall enter at one door, fill up and go out at the other, with as little delay as possible.

A battery of urns on an urn stand is also placed in this end of the kitchen.

A bakeshop is provided, which contains a bake oven in one corner convenient to the flue, a pastry kettle, baker's work table, dough trough and sink. This bakeshop is not intended for heavy bread baking; it is only




Kitchen equipment for 150 to 250-bed hospital. Designed for THE MODERN HOSPITAL by P. B. Schweikert.

for rolls, pastry, corn bread, muffins, biscuits, puddings, etc. A bread bakeshop requires a much larger oven and other apparatus requiring more space.

All the details of specifications of the different fixtures have already been dealt with in previous articles.

It will be found that the kitchen shown has plenty of natural light. The heat and gases will all be sucked up under the canopy and carried into a flue with a fan on top, as shown in last month's MODERN HOSPITAL, so the ventilation will be as nearly perfect as possible.

The floor space is ample for the purpose and small enough to prevent unnecessary steps, which is an important matter. It is a fallacy that a large kitchen gives better ventilation. If ample fresh air can get in and proper provision exists for carrying away the heat, the small kitchen will be just as cool as the large one.

### Electric Cooking in the Ward Kitchen

The enemies of electricity as a fuel for cooking have only one real objection—the cost of current.

Institutions which manufacture their own electricity have usually a low cost of production, and since the load is light during the day any extra current used is really a negligible quantity in point of cost; and in many places electricity for institutions does not cost over 2½ cents from the light company.

In the ward kitchen the cooking done is light and intermittent and the actual number of minutes the current is in use is not usually large.

Gas heats up the kitchen and vitiates the atmosphere, and unless the burners have a regulation seldom found, it also blackens the utensils, whereas electricity does not.

The one thing essential is to shut off the current when the hot plate is not in use and the use of red light on the circuit which shows when the current is on and will enable the head nurse in passing to see whether someone has been careless and will practically insure the economical use of current.

Under these conditions a hot plate such as was illustrated in the August number of THE MODERN HOSPITAL (Fig. 4) will be found the most convenient, as toasting and broiling can be done underneath and toasting and boiling can be done on the top at the same time.

Where a steam table is used the water pan can be heated with electricity. It is an easy matter to apply the heating units to the bottom of the water pan by taking out the gas burners. It is important, however, to see that a good type of heating unit is procured.

The placing of the heat unit in the water is not satisfactory, because the water gradually destroys it and it is in the way when the pan is to be cleaned out.

Of course, where steam is available all the year round it is preferable to either gas or electricity, but in many cases there is no steam available in summer, and in these cases electric heating units can be applied to the steam tables in summer without touching the coils, and the heat can be taken from them in summer and from the coils in winter, when the demands on the electric plant are always greater.

One word of warning is, however, necessary: see that the electrical device chosen is substantially built. At the present time strongly built devices can be obtained, though this was not the case some years ago.

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An examination will soon be held by the Illinois State Civil Service Commission, Springfield, Ill., for the purpose of filling the recently created position of epidemiologist for the Illinois State Board of Health. The position will pay $2,400 a year. It is open to male residents of the United States over 25 years of age, and the examination will be conducted on a plan which will not require the applicant to go to Illinois unless he stands a good chance of qualifying.

## EXHIBITION ROOMS DESIGNED TO SHOW HOSPITAL FEATURES

### Treatment of Walls, Floors, Windows—The Furnishings—Pictures That Are Not Dirt Catchers

One of the difficulties encountered by hospital people who have ideas and ideals in matters of equipment and administration is the want of money to do the necessary experimental work to try out the practicability of their ideas. That is the reason why the large, well endowed hospitals can do much in the way of leadership, and why the small hospitals, as a rule, must follow; these latter have not the necessary funds to make changes here and there, to make up new apparatus and put in new equipment.

Fig. 1. A typical ward, with dado, frieze, and special wall treatment, and new design of pictures.

And yet, we know that many problems in our hospitals are not settled, and that a lot of experimental work must be done before they *are* settled, and somebody must be found who will be sufficiently interested to spend the money at the instance of the hospital people to do a lot of experimental work, and we all have our own ideas about certain things.

In order to carry out some of these ideas along certain lines it became possible a few weeks ago to equip a hospital ward and a hospital private room and to make a part of that equipment some items that have not been considered satisfactory in our hospitals up to the present time.

The illustrations accompanying this article show as nearly as photography can be made to do, some of these items which may be described under their several headings.

#### THE WALLS

In most hospitals the walls and ceilings are in solid colors, whatever those colors may be. We know that walls and ceilings do not wear out or become defaced equally all over; for instance, the lower parts of the walls are scratched and scraped by furniture, beds, and by people handling screens, chairs and other furniture; but it is impossible to go over the lower part of the walls without at the same time going over the whole room, because it is impossible to match paint after it has been on for some time. For these reasons the rooms herein described have been divided by dados and friezes, and into panels, thus making it possible to go over the lower part of the room with fresh paint without having to spend the time, labor and material to go over the rest of it; and under this scheme any part of the room may be renewed where the walls have been defaced, without having to do the whole surface over.

The question of wall colors for hospitals is a universally debated one, and until tastes are all alike it will be impossible to satisfy everybody in regard to colors. Without any question, positive, glaring colors are not desirable, especially in quarters occupied by patients who are changing from day to day; one may like gray, another blue, another green, and so on.

In the coloring of these walls an attempt has been made to compromise on artistic taste, and a color has been chosen that cannot really be described. It is neither yellow, nor green, nor gray, but a neutral composed of all these, which, it is believed, will appeal to the taste of almost any patient in that it is neutral and negative. The painting is of the so-called mottled type in which the various coats are put on with a stippling brush, as indicated in figure 3.

#### THE WINDOWS

The treatment of the windows in this ward and room speaks for itself. Nothing gives a patient's room so thoroughly comfortable and cozy a feeling as quietly dressed windows. The hangings need not be expensive, but they must indicate coziness, elegance and quiet. The curtains in these windows are madras, ivory in color, with tiny figures of light green.

Fig. 2. Design of a private room showing wall and window treatment. Note pictures.

#### PICTURES

For a long time hospitals have known the need of picture decoration in wards and rooms, and yet it has been quite well known that picture frames hung upon the walls are unsanitary dirt catchers, and while it may be humanly

possible to clean pictures after each patient has departed or when the room is cleaned, we know that that is not done and that pictures once hung remain in their places through many processes of cleaning. We know that this means microorganisms of infinite variety, which may or may not be disease-bearing.

The pictures on the walls of this ward and this private room are of a new style. They are prepared on the old decalcomania principle and are transferred to the painted walls. Most of us remember in our childhood the decalcomania transfers that we all liked to transfer to our school books and on eggs for Easter, and the like; this is precisely the same process. After the transfer is made

Fig. 3. Detail of ward wall, showing mottled effect, done with a stippling brush; also dado, frieze and picture.

and the picture is perfectly dry, a coat of artist's copal varnish is laid on thinly. The frames are made with shadow effects that will be noted especially in the detailed illustration, Fig. 3.

FLOORS

The floors of the ward and the private room are covered with linoleum, that on the ward being light brown and that on the private room olive green. The rugs are in bright colors, with green figures predominating to harmonize with the general treatment of the two rooms.

These rooms are at 1347 Michigan avenue, Chicago, on the fourth floor, and are open to the inspection of the public during all business hours. The hospital people will meet with every courtesy if they care to see them, and demonstrators are on hand to explain the various features.

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The hospital which G. H. Marsh, of Van Wert, Ohio, will erect and present to Van Wert county, fully equipped, at his personal expense, is to have accommodation for 65 patients. There will be two seven-bed wards, eight rooms with two beds each, twenty-five private rooms, and an emergency ward containing ten beds.

## HINTS FOR HOSPITAL SUPERINTENDENTS.

The surgeons at Hahnemann Hospital, Chicago, have adopted the plan of using a large nickel ring sewed to the tape of their "lap" sponges, instead of the time-honored "snap." This ring has the advantage of being always attached and is quite as safe a protection against leaving sponges in the field as the snap forceps.

Dr. F. K. Camp, of Wesley Hospital, Oklahoma City, furnishes a thermos bottle for every bed in that hospital, and each morning the thermos bottles are filled with ice cold water. The bottles are then hung over the head of the bed and patients can have a cold drink for the next twenty-four hours and the nurse will not have to gallop out to the drinking fountain in the hall or back to the diet kitchen; moreover, many of these patients can help themselves to a drink if the cold water is hung over the head of the bed. This is an excellent suggestion. The thermos bottles do not cost so very much now, and if any kind of care is given them they last indefinitely. More hospitals ought to use them.

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If you are working under the workmen's compensation laws, you had better study those laws very carefully and learn just what your duties and privileges and compensations should be. Most states now have these laws and they are not only rather complex and intricate, but in most of the states the legal board provided to carry them out is given a good deal of latitude as to details. You should be in pretty close touch with this board in your state, and know just what its policies are in regard to patients under its care.

These workmen's compensation laws, where they are in operation, are going to require better bookkeeping on the part of the hospitals, and hospital administrators had better look up this part of the business also. Most of these laws are yielding too little revenue to hospitals for the work on patients that they are required to do, and good bookkeeping as a preliminary to argument for better compensation is going to be necessary.

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Some hospitals that serve excellent foods, set attractive trays, and buy the best that the markets afford have a reputation for poor food service; the doctors, nurses, help and patients all complain. In some of these institutions the cook or housekeeper may be partly to blame, but if the case is submitted to an impartial analysis it will be discovered that "deadly monotony" is the indictment. It has been said by European epicures that Americans eat too much "with their eyes"; it is certain that the mind has as much to do with the enjoyment of food as the digestive apparatus; and if one knows for a certainty just what is to be served for supper on Sunday evening, December 19, next, and for every meal between now and then, the imagination will have been surfeited in advance of the meal and hunger will have nothing left to satisfy except just physiological necessity. When one is doing hard work in the open air, so that oxidation is active, and the waste burned up rapidly, plain physicial hunger is enough, but that condition does not obtain in any hospital, and there must be food for the imagination as well as for the palate and stomach; nothing so stimulates the imagination as the sense of surprise; and there is no condiment so effective as a change that has not been anticipated.

Moral: Encourage your dietitian to spring surprises at meals; even the hackneyed articles can be served differently.

# THE MODERN HOSPITAL

*A Monthly Journal Devoted to the Building, Equipment, and Administration of Hospitals, Sanatoriums, and Allied Institutions, and to their Medical, Surgical, and Nursing Services*

Vol. V *November, 1915* No. 5


## NEW SAN FRANCISCO HOSPITAL IS FINEST OF ITS KIND

### Group of Ten Buildings, Costing Three and One-Half Millions, With One Thousand Beds, Is Architecturally Beautiful, and Sounds Last Word in Economical and Efficient Administration

By DR. R. G. BRODRICK, Superintendent

THE new San Francisco Hospital is maintained by the city and county for the treatment of its sick poor. It is under the control of the Department of Public Health, which consists of a commission of seven members, four of whom are laymen and three physicians.

With the completion of the new general hospital, at an approximate cost of three and one-half million dollars, derived from the sale of bonds, San Francisco will have one of the finest and handsomest institutions of its kind in the United States. The hospital, when completed, will accommodate about 1,000 patients; hence the cost per bed amounts to about $3,500.

The late Mr. Newton J. Tharp designed the buildings and chose for the location of the main group the frontage facing Potrero Avenue, a broad avenue on which is operated the municipal car line.

The hospital is located in what is known as the "Warm Belt" of the Mission, at the edge of the most thickly populated district of the city; it is situated on a rising elevation and covers four city blocks, 866 feet long and 760 feet wide. The tuberculosis and infectious groups will be situated on higher ground on the easterly portion of the property.

The buildings are so arranged that there is ample light and plenty of ventilation around each particular unit. In general, the type of construction is what is known as the corridor-pavilion, the buildings being connected by a main corridor in such manner that one can go from building to building without exposure to the elements.

The Italian renaissance style of architecture has been followed in designing the buildings, which are of the finest Class "A" fireproof construction possible for human skill to produce. The foundations are of concrete, waterproof and under-drained. The floor and roof construction is of reinforced concrete. The flooring throughout the offices and bedrooms in the administration building and in the nurses' home is of maple; in the wards and in the bedrooms of the service building the floors are covered with battleship linoleum cemented to the concrete. The operating rooms, treatment rooms, toilets, laboratories, etc., are finished with tile, and the floors of all corridors are of terrazzo. The exterior walls are of brick of rich color, laid in a very beautiful way, with terra-cotta trim.

The grounds are extensive and present a park-like appearance, having been laid out by Mr. John McLaren, the well-known designer of the beautiful gardens of the Panama-Pacific International Exposition, the entire area being enclosed by an iron grill fence and lighted at night by about forty ornamental electroliers.

The interior finish has been given careful study. All angles are rounded; baseboards are finished with sanitary cove; window sills generally are of marble; all door and window frames are of wood; the doors are smooth and flush, without panels, and are painted with five coats of cream enamel paint, except in the administration building and

Receiving building. Ward building. Ward building.

Fig. 1. San Francisco Hospital, San Francisco, Cal. Panoramic view of main group.

in the nurses' home, where the doors are of quartered oak, natural finish; the plastering is of Keene's cement throughout and is covered with three coats of paint of a light buff color. The plumbing fixtures, of which there are over one thousand, are of vitreous ware; all pipes are placed in vertical pipe racks in such a manner as to be within easy reach when necessary.

Plate glass has been used in all windows, with the exception of a portion of the service building, power plant and laundry, where the panes are of sheet glass. All of the windows are covered with bronze screens.

The *main group* consists of ten buildings, begun in 1910 and completed May 1, 1915, when it was officially opened for the reception of patients. It has accommodations for 512 patients and is so constructed that 752 beds may be provided if found necessary. The main entrance is in the center of the Potrero Avenue frontage and persons entering or leaving the grounds are compelled to pass the gate house. The approach from the main entrance to the administration building is impressive, consisting of a series of terraces and stone stairways, on either side of which are lawns and flower beds. Provision is also made for ornamental fountains.

The *administration building,* the central feature of the main group, is three stories high and provides accommodations for the general offices of the superintendent and his assistants on the first floor. In the main office is located the central telephone exchange, and switchboard for signal service; provision is also made for fire alarm station at this location. By means of a signal board, operated in conjunction with the silent call system, the telephone operator records on a time stamp the time when the patient's call is registered, and the time it is answered by the nurse. At the northerly end of the administration building, on

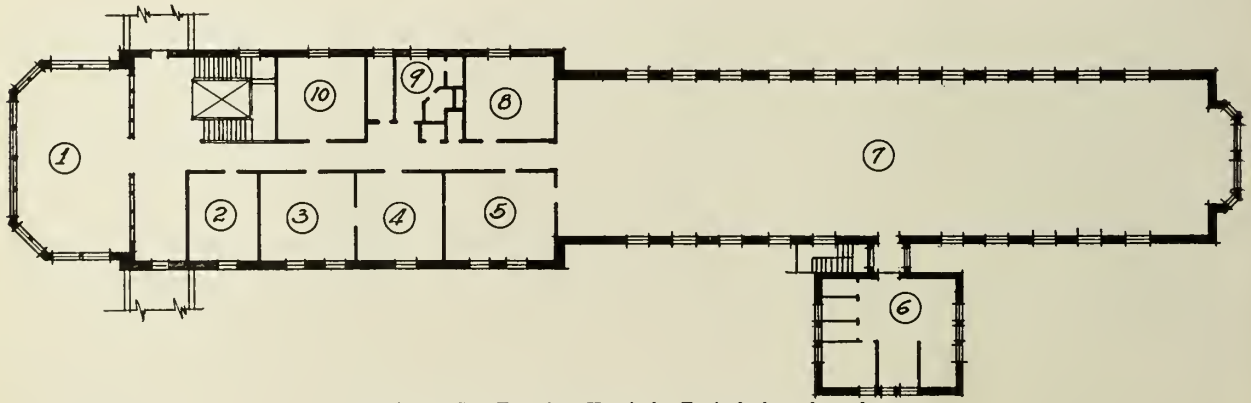



Fig. 2. San Francisco Hospital. Typical plan of ward.

1. Solarium.
2. Laboratory.
3. Dining room.
4. Diet kitchen.
5. Dressing room.
6. Toilet.
7. Ward.
8. Two-bed ward.
9. Toilet.
10. Two-bed ward.

Main corridor. Administration building. Ward buildings and service building.

the first floor, is a large room which is used by the visiting staff and which will also be available as a meeting place for the advisory council, committees interested in social welfare work, etc.

The two upper floors are devoted to the use of the house officers and interns. They contain recreation and general reception rooms, library and billiard room, with a liberal provision of shower baths, toilets and other conveniences. In the basement are storerooms for the storing of trunks, furniture, enamelware, electrical stores, etc., and a large fireproof vault for the safekeeping of records. A portion of this building is set aside for the accommodation of the superintendent.

The main *ward buildings*, of which there are four, are six stories high. Two are located to the north and two to the south of the administration building. Each ward building contains four wards, a roof garden with penthouse and a basement. There is provision in each ward for twenty-nine beds, there being twenty-five beds in the general ward, which is 110 feet long and 26 feet wide, and two beds in each of the two preparation wards, with a cubic air space of 1,500 feet for each patient. A special feature of the ward buildings is the sanitary tower, placed on the north side of the buildings, opposite the middle of the ward. This tower contains the toilets, baths, wash basins, utility station, clothes chute, blanket warmer, etc. It is connected with the ward by a narrow corridor in such manner as to permit of cross-ventilation between the two structures. The wards have a full southern exposure and are well ventilated by hopper transoms placed above the windows.

Each bed is placed between two windows and is furnished with a reading lamp, silent call system and an electric socket for examination lamp. Each ward is furnished with a treatment room, diet kitchen, ward dining room, laboratory, linen room, toilet, wash room and janitor's closet. At

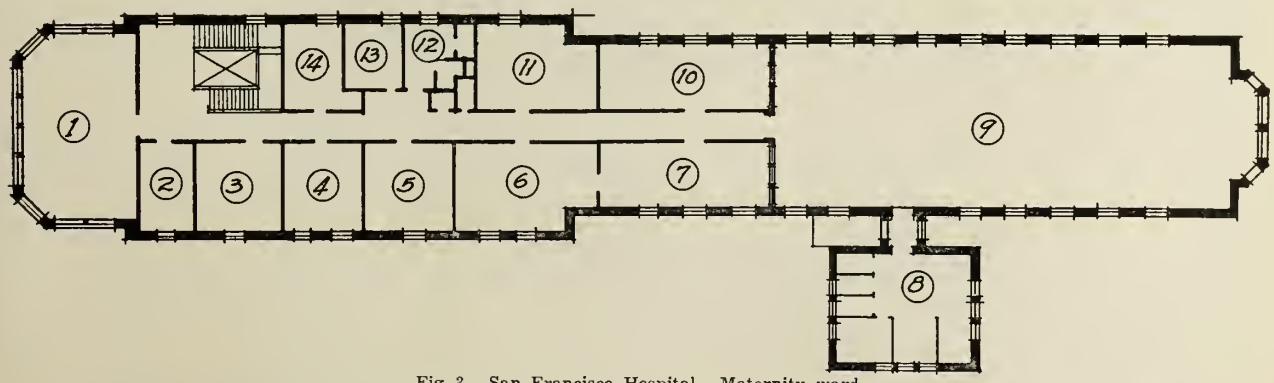



Fig. 3. San Francisco Hospital. Maternity ward.

1. Patients' waiting room.
2. Doctors' dressing room.
3. Isolation room No. 1.
4. Isolation room No. 2.
5. Diet kitchen.
6. Delivery room.
7. Nursery.
8. Toilet.
9. Ward.
10. Nursery.
11. First stage room.
12. Toilet.
13. Nurses' supplies.
14. Laboratory.

the easterly end of each ward is a large solarium, the walls being almost entirely of glass. A large terrace on the southerly side of the first floor of the ward buildings permits of the patients being wheeled into the open air and sunshine. Electric passenger elevators, conveniently located, each of which is capable of carrying a bed, are arranged for operation by lever, or by push button control, the change from one system to the other being effected by a throw switch in the elevator machinery room.

The *maternity ward* is provided with accommodation for twenty-five patients, there being beds in the ward proper for twenty patients and rooms for five. Adjacent to the ward are toilet facilities placed in a sanitary tower and nearby are two nurseries; then follow in order the first stage room, delivery room, diet kitchen, dining room, two isolation rooms, doctor's dressing room, laboratory, supply room, toilet and janitor's closet. At the easterly end is a solarium.

The *children's ward* has been divided by glass cubicles, 9 feet high, into four smaller units, each containing six beds, so that to a certain extent contact infection from communicable diseases will be controlled.

The *receiving building*, which faces Twenty-second street, at the northerly end of the main corridor, is five stories high in the main portion, leading from which are three wings each three stories high.

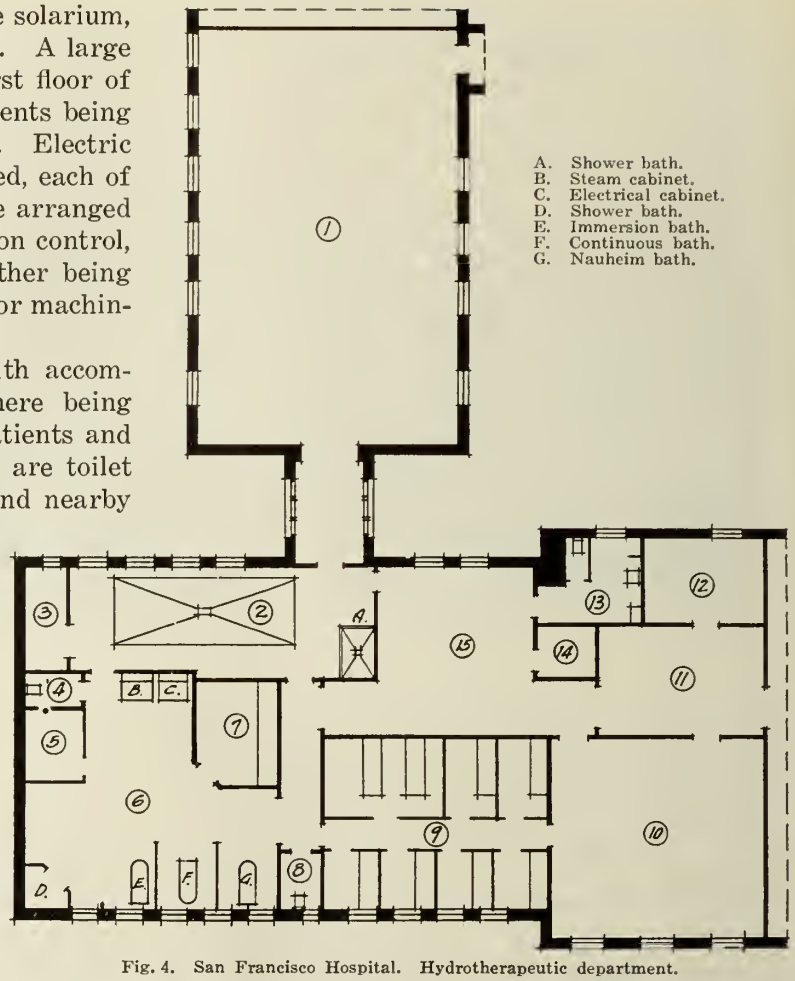



Fig. 4. San Francisco Hospital. Hydrotherapeutic department.

1. Mechanical apparatus.
2. Plunge bath.
3. Pump room.
4. Toilet.
5. Irrigation room.
6. Douche room.
7. Steam room.
8. Toilet.
9. Dressing rooms.
10. Lounge room.
11. Hall.
12. Store room.
13. Toilet.
14. Closet.
15. Office.

This building has been designed for a five-fold purpose:

1. To receive patients entering the hospital proper.
2. For use as an emergency department.
3. For an out-patient department.
4. As a surgical pavilion.
5. For the purpose of instructing students from the medical colleges.

On the main floor is situated the emergency department, consisting of receiving station, operating rooms and wards; an out-patient department, consisting of reception room, treatment rooms, drug room and rooms for social service workers; department for receiving of patients, consisting of reception rooms, examining and treatment rooms, bath rooms, two observation wards and eight isolation rooms. It is probable that a dental clinic will also be established in this location. On the second floor is the surgical pavilion, which contains, besides the operating rooms, two large surgical amphitheaters, each with seating accommodations for fifty students. On this floor is also located the x-ray department, eye, ear, nose and throat, and urological examination rooms. Accommodations are also here provided for the care of patients before and after operation.

On the third floor is an amphitheater with seating accommodations for 200, with laboratories adjacent, used by the faculty of the five medical colleges affiliated with the hospital for demonstrating purposes. On this floor also are the rooms in which the dressing sterilizers are situated; thus excessive humidity on the second or operating floor is avoided. In the basement is situated the hydrotherapeutic department, which is second to none in San Francisco. It is equipped with dressing and lounging rooms; douche, steam and irrigation rooms; plunge and mechanical apparatus department. In the douche room are shower baths, steam cabinet, electric cabinet, cleaning bath, continuous bath, Nauheim bath, massage table, etc.

The ventilation in the receiving building is con-

Fig. 5. San Francisco Hospital. Lobby, administration building. The floor is of gray Tennessee marble; wainscoting of white marble, bordered with black Belgian marble; door casings, window casings and archways are of onyx.

Fig. 6. Main corridor, 789 feet long. Floor is of terrazzo. Note the cross ventilation above.

Fig. 7. A view of the nurses' home. There are over forty of these concrete electroliers on the grounds.

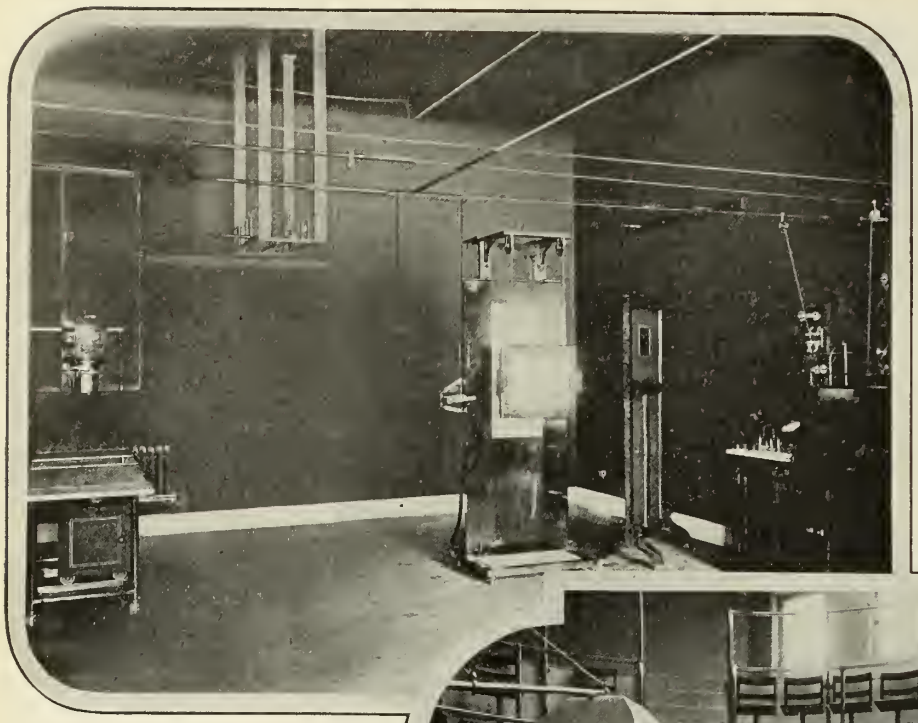


Fig. 8. Section of the x-ray department, showing trochoscopic table, fluoroscope, shield and coil.

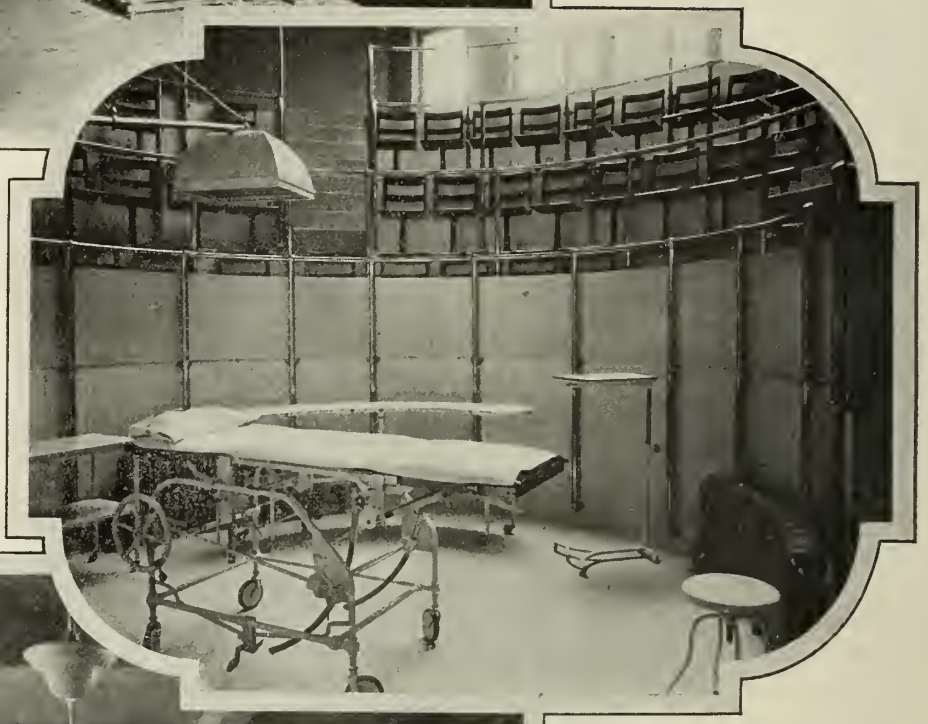


Fig. 9. One of the amphitheaters, surgical department, receiving building.

Fig. 10. A typical ward. Note open hopper transoms, which ventilate without cost; also individual silent call system, reading lamps, double shades, etc.

trolled by a double mechanical system, the plenum system; one for supply and one for exhaust, the air being drawn in through an aperture fifty feet above the ground, washed and distributed by Sturtevant fans, after proper heating, to the various operating rooms. The mechanical exhaust system of ventilation can be operated separately in different parts of the receiving building.

All operating rooms are furnished with running sterile water.

To the east of the receiving building is the *pathological building*, a three-story structure, now in process of construction. On the first floor will be the morgue, post-mortem rooms, rooms for animal experimentation and kennels in connection therewith; also a chapel. On the second floor will be accommodations for the main chemical and bacteriological laboratories, which will be operated in conjunction with the central laboratory of the department of public health.

In the rear of the administration building is the *service building*, in the center of the main group, consequently easy of access from the other buildings. It contains the main kitchen and serving pantry, from which all food is served, for removal in food carriages to the various wards. Secondary serving pantries are between the staff dining room and nurses' dining room and between male and female help dining rooms. The drug and linen rooms are also located on the main floor of this building. The two upper floors are furnished as quarters for the male and female help. Not more than two employees sleep in each room.

In the basement provision is made for a number of general storerooms, mattress and pillow rooms, bakery and a large locker room for the accommodation of patients' clothing.

The *nurses' home* is situated at the extreme southerly end of the main corridor. A garden faces the south, where the nurses may enjoy themselves and be free from view of the ward buildings, as well as the public. A large lecture room, social hall, recreation rooms, library, dining room, kitchen and suites for the superintendent of nurses, assistant superintendent of nurses, etc., are on the first floor. The two upper floors are arranged for the accommodation of 120 pupil nurses. There are not more than two nurses in a single room. Each room is furnished with built-in quartered oak closet and chiffonier, between which is a wash basin.

The *power plant* is situated in the center of the hospital group, so as to give equal distribution and minimum length of steam mains, etc., and supplies all electric power and steam used throughout the buildings. The power plant consists of four 250 horsepower Heine boilers, carrying 175 pounds steam pressure, which are fired by crude oil by the Dahl system. The oil is heated to a temperature of 270 degrees Fahrenheit under a pressure of 130 pounds, which does away with the necessity of steam air atomizing. Space has been provided for another boiler, when needed.

The electric generating plant consists of four 125-kilowatt Curtis turbine-generator units, running at 2,400 revolutions per minute. The generators are of the three-wire type, delivering current at 125 volts for lighting and 250 volts for power. The main switchboard is also located in the room with the generators, and distributes both light and power to all of the buildings through individual feeders to each. The switchboard consists of five generator panels, namely, one main power panel, one paralleling panel, which is arranged for connection to an outside source of supply, three lighting panels. Each building has a main switchboard for light and power.

All steam, hot and cold water, steam return, gas, electric and other pipes are run in a system of tunnels connecting the power house with each building. All pipes in the horizontal and vertical directions are placed so as to be within easy reach in case of the necessity of repair. Low pressure steam from turbine and pump exhaust is used for the direct radiators in all wards and buildings, except in the receiving building, where, as already stated, the plenum system is used for the heating of operating rooms and amphitheaters. There are 22,000 feet of direct radiation installed in the buildings so far constructed. There is also located in the power plant a twenty-ton ammonia direct expansion refrigerating machine, with brine system of circulation to the main refrigerator in the kitchen, butcher shop and main storerooms, which is used for cold storage and ice-making. Cold storage in the wards is obtained by the use of artificial ice in refrigerators.

The hot water system is a forced circulation, the water being heated to 140 degrees by the exhaust steam. All pumps in the power plant are duplex and in duplicate, reducing the chance of a shut-down to the minimum. There are two fuel oil tanks, one for the fire room, having a capacity of 11,000 gallons, and the other for the engine, having a capacity of 1,500 gallons. Two feed water heaters and purifiers are installed in the boiler room. The boiler pumps are duplex, in duplicate, of large capacity. All machinery operated by power is electrically driven, there being forty motors installed at present. There are four hydraulic elevators, five electric elevators, and a number of electric and hand operated dumbwaiters. On the southerly side of the power plant, with which it is closely connected, is the laundry,

Fig. 11. Playground, children's department.

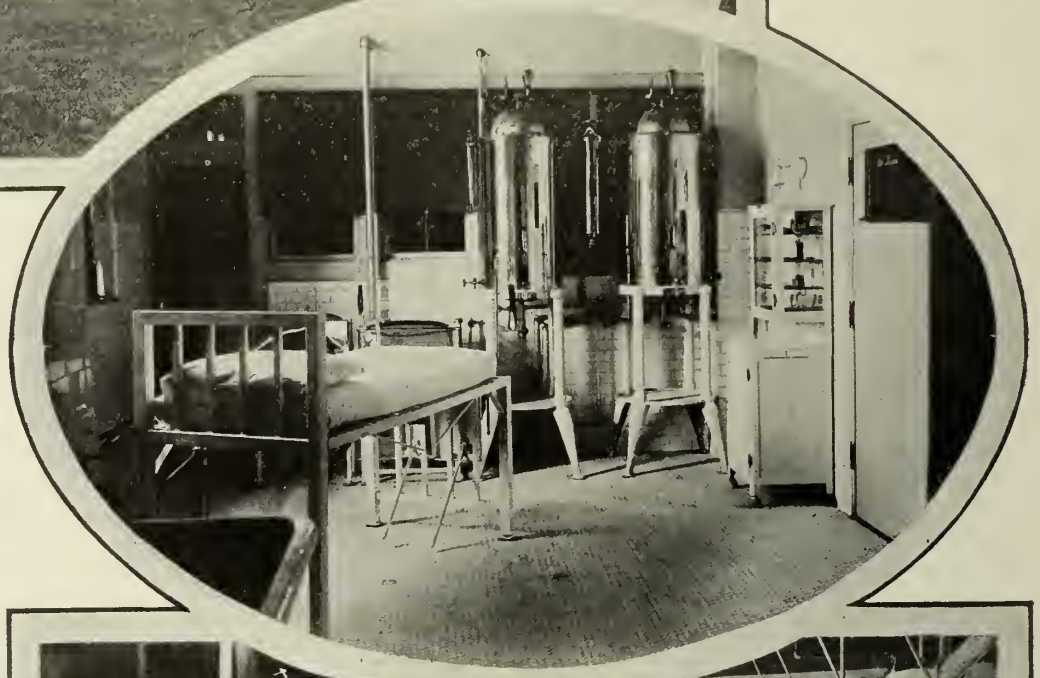


Fig. 12. Delivery room, maternity department.

Fig. 13. One of the four glass cubicles, children's wards. Each cubicle contains six beds.

Fig. 14. The main kitchen.

Fig. 15. The laundry, showing washers and extractors.

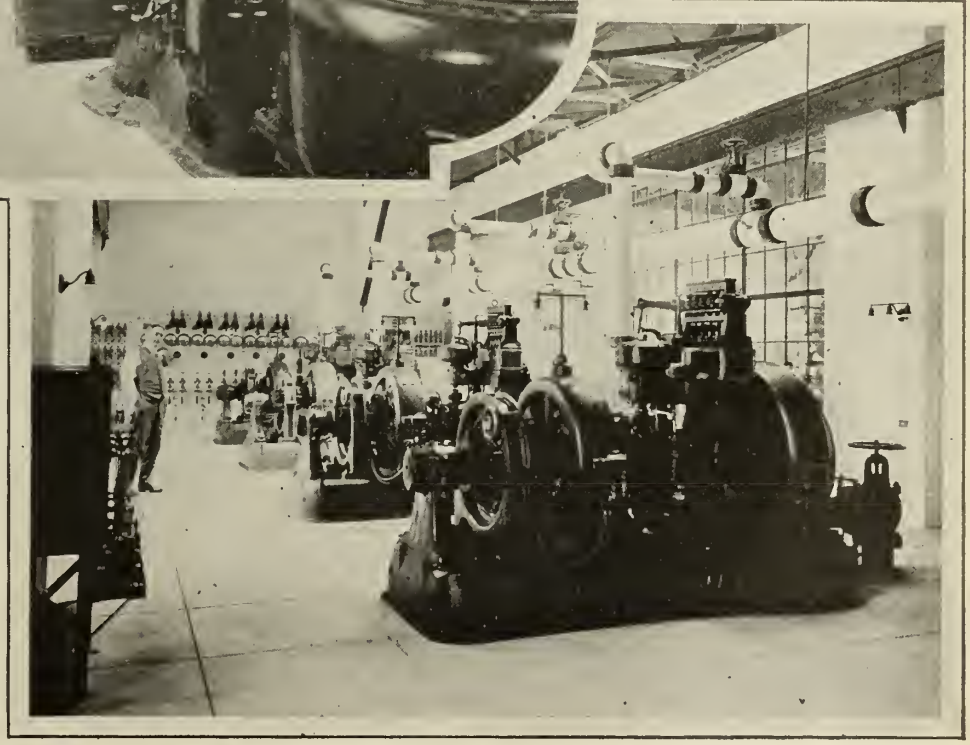


Fig. 16. The four turbine-generators.

in which a complete and very extensive plant is installed.

The time system is operated through a master clock in the superintendent's office, from which an electrical impulse is sent to each of the sixty-eight electric clocks throughout the building every minute. The call signal system for doctors, nurses and other employees is a buzzer system, operated from the telephone switchboard, buzzers being installed on each floor of every building. The silent call system from the patients' beds is operated on the 125-volt lighting circuit. Upon the patient pressing a button in the flexible cord attached to the bed, it lights a green light over the bed, also a green light at the nurse's desk, in the ward corridor, in the diet kitchen and in the main office directly over the private exchange board. The method of registering the silent call system is referred to above in connection with description of the administration building.

The telephone system consists of a private exchange equipped for 159 Bell telephones. At the present time there are but eighty-two installed.

The artificial lighting in the buildings is of the "semi-indirect" type, the lower portion of the fixture being translucent, while the major portion of the light is reflected from the ceiling.

Plans for the tuberculosis department, with capacity of 250 beds, and for the isolation department, with capacity of 110 beds, are now being prepared, and construction will follow in the near future. It is probable these buildings will be ready for occupancy within a couple of years.

The equipment of the San Francisco Hospital has been given much attention. Every room in the hospital was first equipped on paper and then each item was totaled in the aggregate and a stock card made for each article. This card showed the rooms to which such article was to be assigned, so that as the equipment arrived at the hospital no confusion ensued. Moreover, this method furnishes a complete inventory of the hospital equipment. A committee was appointed by the board of health to equip the hospital. As the style of each article was decided upon, photographs, cuts or designs were made so that there could be no doubt as to what the contractor was bidding upon. Further, each contractor was required to submit a sample, which samples have been retained, and placed in what is known as the "sample room."

There are many features of construction, equipment and management that cannot be described without making this article too lengthy. Suffice it to say that the standard of the hospital is such as to entitle it to be ranked as one of the leading hospitals of this country.

Great credit is due the members of the board of health, especially those of the building and hospital committees, as well as the architectural commission, for the care with which they have handled this problem. It is through their efforts that San Francisco has one of the most practical, as well as most beautiful, municipal hospitals. It is to be hoped that this noble group of buildings will remain as a monument to the honor of those who have been privileged to be associated with its construction.

## BIG PUBLIC HEALTH MEETING

### Annual Convention of the American Public Health Association at Rochester Brought Notable People

The 1915 meeting of the American Public Health Association was one of the most successful and productive the Association has had. There were about 2,000 health workers present in Rochester and over 150 papers were presented before the New York Sanitary Officers' Conference and before the general sessions of the American Public Health Association and its six sections. This meeting included not only the forty-third annual meeting of the Association, but also the fifteenth annual conference of the Sanitary Officers of New York, called by the state department of health.

It was probably one of the most important public health gatherings that this country has seen for some years. Among the noted speakers on the program were Gen. Wm. C. Gorgas, Surgeon General of the United States Army; Prof. Wm. T. Sedgwick, a pioneer in the education of public health workers, who is professor of biology and public health at the Massachusetts Institute of Technology and president of the Association; Dr. Herman M. Biggs, New York State commissioner of health; Prof. C. E. A. Winslow, director of the division of publicity and education in the New York state health department, who has since become professor of public health at Yale; the Honorable Wm. C. Redfield, Secretary of Commerce, Washington, D. C.; and His Excellency, Governor Whitman, of New York. Governor Whitman was most enthusiastic in the stand which he took for public health.

The meeting was an important one in the history of the Association, not only on account of its size and the enthusiasm which was present at all the various sessions, but also because it was the occasion of a slight reorganization in the form of government of the Association which constitutes a distinct step towards making the Association an increasingly important factor in public health work throughout the United States.

### Methods of Acquiring Drug Habit

Dr. Joseph C. Doane, chief resident physician of the Philadelphia General Hospital, in a recent study of 153 cases of habitual users of drugs, arrived at the following analysis with special reference to methods of acquiring the habit:

| | |
|---|---|
| Association | 86 |
| Doctors' prescriptions | 14 |
| Smoking opium | 23 |
| Other drugs, mainly cocaine | 4 |
| To keep awake | 2 |
| To cause sleep—quiet nerves | 17 |
| Not stated | 7 |
| Total | 153 |

# A SOCIAL SURVEY OF DISPENSARY PATIENTS IN PHILADELPHIA

## Report on One Thousand Cases—Results Show "Abuse of Charity" in Only Twenty Instances—Unemployment, Poverty, Illness, Alcohol, Ignorance Are the Chief Causes of Need for Dispensary Care

By BLANCHE JOBES, Special Investigator for the Social Service Department of the Presbyterian Hospital, Philadelphia, Pa.; FRANCES HOSTETTER, R. N., Head Worker

DURING the eight weeks from March 1 to April 24, 1915, one thousand patients entered in the dispensary register of the Presbyterian Hospital as new patients or as coming to a new clinic, were interviewed for the purpose of determining the causes impelling them to seek public medical advice, their financial circumstances and their social needs. The following facts and figures have been collected with every effort at strict accuracy and with as much thoroughness as the necessarily hasty character of the interview would permit. While there are doubtless many minor errors and mistakes of judgment, the results are presented with confidence in their essential accuracy.

### MEDICAL ANALYSIS

These thousand patients were found to come from 924 families, over 1,500 members of which were being or had at some time been treated at the Presbyterian Hospital. Of the thousand patients who happened to be interviewed, 347 had themselves been previously treated, many of them at the same clinic. About 25 of them attended more than one clinic during the two months. They were distributed among the various clinics as follows:

| | | | |
|---|---|---|---|
| General medical | 177 | 274 medical | 480 adults |
| Children's medical | 97 | | |
| General surgical | 303 | 408 surgical | 202 children |
| Children's surgical | 105 | | |
| Orthopedic | 12 | | |
| Eye | 117 | | |
| Ear, nose and throat | 104 | | |
| Skin | 37 | | |
| Gynecological | 63 | | |
| Nerve | 14 | | |

1,029 clinics attended by 1,000 patients.

*Diagnoses.* An analysis of the diagnoses shows the following rough classification:

| | | |
|---|---|---|
| Chronic troubles | about 25 | cases |
| Slight or temporary | about 300 | " |
| Needing a specialist or hospital facilities | about 490 | " |
| Undiagnosed | 159 | |
| Diagnosis illegible | 11 | |
| History not found | 11 | |
| Examination negative | 4 | |
| | 1,000 | |

*Hours for Clinics.* It was impossible to obtain from the patients any clear opinion as to the best hours for clinics. A study of the situation, however, made it apparent that an earlier hour, say 10:30, for the morning clinics and a later, say 2:30, for the afternoon clinics would obviate the frequent necessity of irregular or omitted lunches, and would enable school children and workers to come without cutting into both halves of the day.

*Usual Medical Resource.* In 790 cases the usual medical resource was determined and 471 or nearly 60 per cent were found to use dispensaries habitually. Of the 319 who go to private doctors as a rule, comparatively few had never entered a dispensary before. Many of the others stated that they had hitherto not needed a doctor.

*Free Prescriptions.* Free medicine was given during the time of the investigation to 37 of the families listed. By all but eight of these it was undoubtedly needed. Forty other patients were noted whose financial circumstances would probably have warranted the giving of free medicine, though it is not known that any of these asked for it. It is very difficult to decide from a hasty scrutiny of the patient's appearance and statements if he is entitled to free medicine or not, and just as it requires the skill of a physician to discover his physical ailment, so is the opinion of a social service expert necessary to the just granting or denying of a free prescription.

### REASONS FOR COMING

*Need for Specialist.* Among the eye and ear cases, many were children whose parents had received notice of defects from the school physician. Twenty were sent directly by the medical inspector or brought by a school nurse. Sixteen others were sent in by homes, nine of them from the Presbyterian Orphanage.

*Confidence.* Those who come to a hospital because needing a specialist often come because they do not know where else to find a suitable one. Many also have been duped by quacks and patent remedies, and turn to the hospital with confidence in its reliability.

*Convenience.* Among the surgical cases, 54 accident cases, most of them sent from the receiving ward, were noted. Under ordinary circumstances most of them would probably not have come to the dispensary. Many of them were willing to pay for treatment, one offering to do so.

*Sent by the P. R. R.* In a class apart are the Pennsylvania Railroad men who are sent to the hospital by their relief doctor under an agreement

with the hospital. These are considered in full later.

CAUSES OF POVERTY

*Unemployment, Low Wages, Sickness, Disability, Death, Desertion.* While the need for a specialist, confidence in the hospital, convenience and other motives weigh in many instances, an overwhelming number of people seek a free dispensary because of poverty, due to a variety of causes, among which unemployment figured in 305 cases and low wages in 205, the two frequently going hand in hand. Sickness or disability, such as blindness or old age, played a large part in 151 cases, and the death of one or both parents in 101 cases, including 30 widows. Desertion or illegitimacy was a factor in 38 cases. Many families, who, on a low wage, manage to keep a little ahead while fortune smiles, are obliged, when confronted by sickness to husband their scanty resources for food and rent, which cannot be obtained free. Others with refined tastes and aspirations pocket pride and accept free treatment in order to keep up a standard of living, by no means luxurious, but covering a little more than the bare necessities.

*Improvidence.* Improvidence enters into the situation in 122 instances. This is especially prominent in the case of single men with a wage adequate for one, though not always for a family. One boasted that he "never has a cent." But perhaps these are offset by the several instances in which young men are helping to support parents or relatives. Alcoholism is known to be a factor in 21 cases and doubtless influences many more. Family improvidence must be discounted somewhat, for, though we can calculate with a cold eye the annual income, we cannot always see the hidden drains that may sap that income. Unfortunate relatives, sickness not explained, reticence in speaking of family troubles may all or each have reduced it. In our ignorance of these facts we may call their poverty improvidence, but who shall say it is improvident to help one's friends, or to attempt a fair standard of living? We can but be especially lenient toward the colored people with their childish thirst for enjoyment, hereditary lack of foresight, and unrestrained generosity toward stray children and relatives.

*Abuse.* In 20 cases out of the 1,000 it was felt that the acceptance of the free care offered by the hospital amounted to abuse. In 15 other cases the absence of definite information or the presence of suspicious circumstances left the question open to doubt. Thus in only 35 cases of the thousand or 3½ per cent was "abuse" judged to be present or probable.

Twenty-two patients came to the surgical clinics and 16 of them were in need of hospital fa-

TABLE OF THE THIRTY-FIVE CASES

| No. | Nationality | Religion | No. in Family | Chief Wage Earner | Income | Rent | Savings | Usual Med. Res. | Need Hosp. Facili. |
|---|---|---|---|---|---|---|---|---|---|
| 28..... | United States | Protestant | 2 | Engineer | $ 800 | Own | $446 | Private | ..... |
| 91..... | United States | Roman Catholic | 4 | Policeman | 1,080 | $15 | Yes | Public | Yes |
| 203..... | Italian | Roman Catholic | 6 | Butcher | ? | 20 | ? | Private | ..... |
| 241..... | ..... | Jewish | 3 | Tailor shop | 850 | 20 | No | Private | Yes |
| 291..... | Irish | Roman Catholic | 5 | Bookkeeper | 1,976 | 20 | No | Private | Yes |
| 298..... | Colored | Protestant | 6 | Hodcarrier | 1,807 | 17 | Yes | Public | ..... |
| 319..... | United States | Roman Catholic | 4 | Stonecutter | 1,456 | 23 | No | Private | Yes |
| 321..... | Russian | Jewish | 6 | Junk dealer | ? | 25 | ? | Public | ..... |
| 324..... | United States | Protestant | 1 | Unable | ? | ? | ? | Public | ..... |
| 323..... | Hungarian | Jewish | 7 | Tailor shop | ? | ? | ? | Public | Yes |
| 373..... | United States | Protestant | 5 | Motorman | 1,352 | 25 | ? | Public | Yes |
| 392..... | United States | Protestant | 7 | Ice and coal | 2,080 | 20 | Yes | Private | ..... |
| 439..... | Colored | Roman Catholic | 2 | Chauffeur | 780 | 8 | No | Private | ..... |
| 463..... | United States | Protestant | 5 | Baker | 1,404 | 20 | No | Private | ..... |
| 504..... | United States | Protestant | 3 | Carpenter | ? | ? | ? | ? | Yes |
| 511..... | United States | Protestant | 4 | Butcher shop | ? | Own | ? | Private | Yes |
| 540..... | Irish | Roman Catholic | 1 | Unable | ? | Boards | ? | Public | ..... |
| 555..... | Irish | Roman Catholic | 3 | Gardener | ? | Own | Yes | Public | ..... |
| 574..... | United States | Protestant | 6 | Printer | 2,846 | ? | ? | Public | ..... |
| 615..... | United States | Protestant | 3 | Foreman | 1,040 | 15 | No | Private | ..... |
| 652..... | United States | Roman Catholic | 9 | Policeman | 2,860 | 19 | Yes | Public | ..... |
| 686..... | United States | Roman Catholic | 6 | Policeman | 1,116 | 23 | No | Public | Yes |
| 690..... | Russian | Jewish | 4 | Shop-keeper | ? | 30 | ? | Public | ..... |
| 757..... | United States | Protestant | 3 | Contractor | ? | 15 | ? | Private | Yes |
| 795..... | Russian | Jewish | 4 | Shoemaker shop | ? | 40 | No | Public | ..... |
| 797..... | United States | Roman Catholic | 8 | Paint dealer | ? | None | ? | Private | Yes |
| 807..... | Russian | Jewish | 3 | Hatter | ? | ? | ? | Public | Yes |
| 815..... | Russian | Jewish | 9 | Express and Furniture shop | ? | 35 | ? | ? | ..... |
| 816..... | United States | Roman Catholic | 3 | Policeman | 1,116 | 18 | Yes | Private | Yes |
| 878..... | Roumanian | Jewish | 7 | Old furniture | ? | 25 | ? | Public | ..... |
| 827..... | United States | Jewish | 6 | Grocery shop | ? | 25 | ? | Private | Yes |
| 848..... | United States | Protestant | 1 | ..... | 530 | 15 | Yes | Public | ..... |
| 912..... | United States | Protestant | 4 | Weight checker | 2,248 | 19 | No | Private | ..... |
| 915..... | Russian | Jewish | 7 | Butcher | 1,716 | 17 | No | Public | Yes |
| 921..... | United States | Protestant | 6 | Produce business | ? | ? | ? | Private | Yes |

cilities. The annual income of these families was estimated to be usually over $1,000, and the worker's employment was practically regular and of a responsible nature. These include four policemen, a foreman in the bureau of highways, eight small shop-keepers, and an ice and coal dealer. In one family there had been much sickness; another patient stated that her father might not let her be treated if it cost anything. An old man of 80 refused to disclose the amount of his savings. Three cases were sent by private physicians, and in three cases false information was given.

*Thrift.* It is difficult to draw the line between people of this class and those who with praiseworthy thrift are laying by for old age or striving to buy a home, and who see their little capital, won by hard economies, threatened by the necessity for long continued medical treatment or by the need for a high-priced specialist. In deciding where to class the doubtful cases the nature of the illness was always considered. Of the 99 cases listed under "thrift," most belong to this class, including several aged couples living on their savings. The cases of abuse are also included.

*Savings.* Of the 924 families, 631 claimed to have no savings, and in most cases the claim was only too evidently true; as when a young colored mother asserted evasively that she had "some," but when pressed confessed the amount to be only $3.50. Forty-seven had savings ranging in amount from $25 to $1,000, and aggregating $8,900, distributed as follows:

| | | |
|---|---|---|
| 3 families had | | $1,000 |
| 4 families had from | $400 to | 500 |
| 10 families had from | 200 to | 300 |
| 13 families had from | 100 to | 150 |
| 8 families had from | 50 to | 100 |
| 9 families had from | 25 to | 50 |

This list includes several Pennsylvania Railroad men.

*Buying Homes.* Of the other cases in which the question of savings was settled, 21 owned their homes, 18 were paying for homes in building and loan associations or keeping up interest on mortgages.

*Insurance, Sick Benefits.* The matter of insurance and sick benefits proved a pretty sure index of a family's financial condition. Even the poorest keep up burial insurance when possible. Only 603 out of the 848 known were paying insurance, and only 326 out of the 824 known had sick benefits, the latter usually being on the chief wage earner.

Fig. 1 shows graphically the proportion of the various causes which weigh in sending patients to the dispensary.

## FINANCIAL ANALYSIS

In order to arrive at the family income and the various factors entering into the economic situation, all wage earners in each family were listed and their earning capacity and actual earnings determined whenever possible.

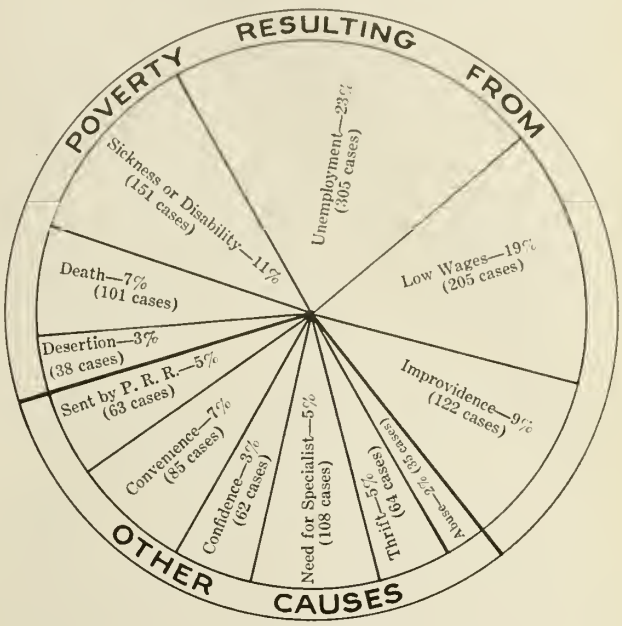



Fig. 1. Reasons for coming to dispensary.

*Trades and Occupations.* The various trades represented are interesting as showing the large percentage of unskilled workers. Laborers head the list with 310, including 89 teamsters. There are 74 ironworkers and mechanics of all kinds, and 109 factory workers, including 76 women and children. Brakemen and conductors figure largely on account of the P. R. R. men. There are 9 policemen, four of them counted among the cases of abuse. Among women, domestics number 75, and 76 are engaged in day's work and cleaning. Most of the latter are mothers. It is interesting to note that out of 155 married women employed, 78 are colored; in other words, there are four times as many colored mothers working as white, in proportion to the number of colored families represented. At the time of the interview 921 workers were employed, 121 were on part time, 221 were idle, and the balance of 107 were unable to work.

### TABLE OF TRADES

Male

| | | | | | |
|---|---|---|---|---|---|
| Laborers | 221 | Plumbers, etc. | 17 | Electricians | 8 |
| Drivers | 89 | Firemen | 16 | Foremen | 8 |
| Mechanics | 70 | Chauffeurs | 16 | Paperhangers | 8 |
| Errand boys, etc. | 46 | Hostlers | 16 | Printers, etc. | 8 |
| Factory workers | 33 | Porters, etc. | 16 | Gardeners | 7 |
| Woodworkers | 32 | Motormen | 12 | Bricklayers | 6 |
| Salesmen | 32 | Watchmen | 12 | Butchers | 6 |
| Painters | 19 | Stoneworkers | 10 | Hucksters | 6 |
| Waiters, etc. | 28 | Tailors | 10 | Blacksmiths | 6 |
| Shopkeepers | 25 | Janitors | 9 | Conductors | 6 |
| Brakemen | 19 | Cooks | 9 | Bartenders | 4 |
| | | Engineers | 9 | Miscellaneous | 73 |
| | | Policemen | 9 | Apprentices | 24 |

Female

| | | | |
|---|---|---|---|
| Factory (inc. child) | 76 | Telegraph operators | 11 |
| Domestics | 75 | Dressmakers, etc. | 9 |
| Day workers | 70 | Stenographers | 8 |
| Saleswomen | 28 | Waitresses | 8 |
| Laundresses (home) | 21 | Practical nurses | 7 |
| Clerical workers | 19 | Charwomen | 6 |
| Laundry workers | 18 | Miscellaneous | 13 |
| Cooks | 12 | | |

*Group I, P. R. R. Men.* The financial status of the 63 Pennsylvania Railroad men is so different that it not only warrants a separate rating, but to average it in would be greatly misleading. Most of the 63 men referred were more highly paid than the ordinary. There were engineers, conductors and brakemen, some with salaries as high as $150 a month. Their average daily earning capacity was $2.76 each. Fifty of the men were heads of families whose total annual income averaged $858. The thirteen single men averaged an annual income of $722. Comparatively little was lost by irregularity or unemployment.

*Group II, Other Workers.* The 924 families include 1,370 workers. Omitting the Pennsylvania Railroad men, the average daily earning capacity of the remaining 1,307 workers, consisting of 842 men, 335 women and 130 children, is $1.76 per person. Their potential annual earnings with no loss from illness or unemployment would be $621,000. Omitting the earnings of single people, this would give an average yearly income of $817 per family. This is none too much for a proper standard of living, but the actual facts are quite different. By sickness and unemployment the average family income is reduced to $725 per year. The 44 per cent of unemployment is partly comprised of seasonal workers, so it is by no means wholly due to the present financial depression. In the best of times many would have been out of employment much of the winter. The loss to income is strikingly shown in Fig. 2.

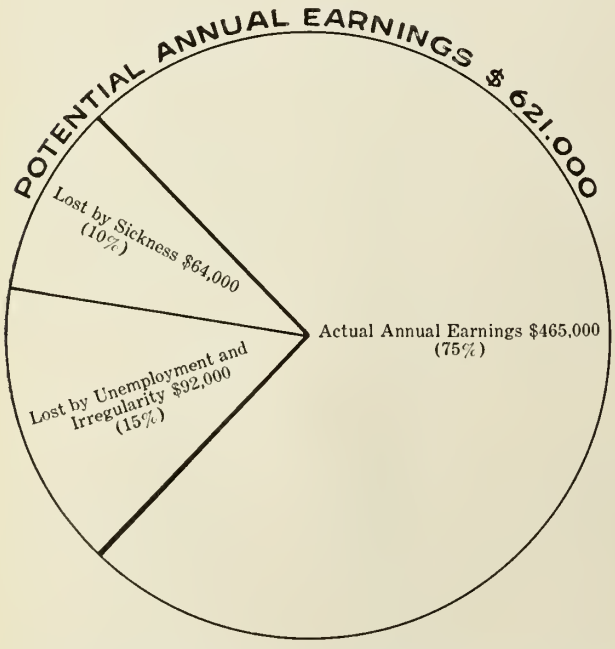

POTENTIAL ANNUAL EARNINGS $621,000
Lost by Sickness $64,000 (10%)
Actual Annual Earnings $465,000 (75%)
Lost by Unemployment and Irregularity $92,000 (15%)

Fig. 2. Relation of sickness and unemployment to the earnings of 1,307 workers (P. R. R. men excluded). With loss from sickness and unemployment eliminated, the average annual income per family would be $817 instead of $725.

*Distribution of Income.* As the average number in the families studied is 4.5 persons to a family, this income of $725 might suffice for the bare necessities were it evenly distributed, but we find 349 families out of 587 whose income is known, falling below this line. In bestowing children Providence unfortunately pays scant attention to the means of subsistence, and we find a family of eight with an annual income of $404, and four families of six with less than $300 per annum on which to exist. It is not out of the ordinary to find a family of nine with an income of $344.

Following is a table giving the annual income of 63 families comprising 369 individuals, the average size of these families being 5.9 persons, and the average annual income $385.

| Four families of 3 members | | Eighteen of 6 members | Ten families of 7 members | |
|---|---|---|---|---|
| $156 | $236 | $140 | $260 | $390 |
| 234 | 270 | 220 | 356 | 430 |
| | | 240 | 360 | 480 |
| Ten families of 4 members | | 250 | 360 | 482 |
| | | 296 | 382 | 528 |
| $224 | $336 | 304 | | |
| 225 | 340 | 340 | Six families of 8 members | |
| 266 | 340 | 360 | | |
| 312 | 340 | 370 | $404 | $572 |
| 320 | 352 | 375 | 516 | 572 |
| | | 390 | 520 | 634 |
| Eleven families of 5 members | | 416 | | |
| | | 416 | Four families of 9 members | |
| $240 | $360 | 436 | | |
| 264 | 360 | 440 | $344 | |
| 312 | 372 | 442 | 537 | |
| 312 | 400 | 450 | 552 | |
| 350 | 432 | 480 | 624 | |
| $460 | | | | |

*Group III, Single People.* The average annual income of the 158 single people (the 13 Pennsylvania Railroad men excluded) is $482. As this includes a number of comparatively well paid men, it is obvious what that of the women must be.

FINANCIAL TABLE

GROUP I, PENNSYLVANIA RAILROAD MEN

| | | |
|---|---|---|
| Total daily earning capacity | | $ 173.70 |
| Distributed among 63 workers, or | | |
| Average daily earning capacity | | 2.76 |
| Total family income | | 42,940.00 |
| Distributed among 50 families, or | | |
| Average family income, per year | | 858.00 |

GROUP II, OTHERS

| | | |
|---|---|---|
| Total daily earning capacity | | $ 2,030.08 |
| Distributed among 1,216 workers, or | | |
| Average daily earning capacity | | 1.76 |
| Total yearly earnings: | | |
| Regular workers (56%) | $276,750.00 | |
| Irregular and seasonal workers (44%) | 188,315.00 | 465,065.00 |
| Distributed among 1,087 workers, or | | |
| Average annual earning, per worker | | 428.00 |

| | |
|---|---|
| Total family incomes | $388,959.00 |
| Distributed among 537 families, or Average family income, per year | 725.00 |

GROUP III, SINGLE PEOPLE

Pennsylvania Railroad Men

| | |
|---|---|
| Total annual earnings | $ 8,388.00 |
| Distributed among 13 workers, or Average annual income, per single person | 722.00 |

Others

| | |
|---|---|
| Total annual earnings | $ 76,106.00 |
| Distributed among 158 workers, or Average annual income, per single person | 482.00 |

## LIVING CONDITIONS

*Housing.* As may be imagined, the conditions under which most of these families live are not ideal, though owing to the superior housing conditions in West Philadelphia as compared with the more densely crowded parts of the city, and to the small proportion of foreigners, 314 homes could be classed as relatively good. A map which was prepared revealed that the patronage of the dispensary was remarkably localized. Except in the cases of the 75 homes visited, the conditions had to be inferred, and a judgment was therefore ventured in only 744 cases. In 230 of these the conditions were only fair, and in 200 positively bad. A few of the colored homes visited were as bad as any in the city. The average rent paid by the families studied is $10.80. Below is an analysis of the housing of the 391 families for which the size of the house was ascertained. Of these 391 families only 236 have baths.

TABLE OF HOUSING

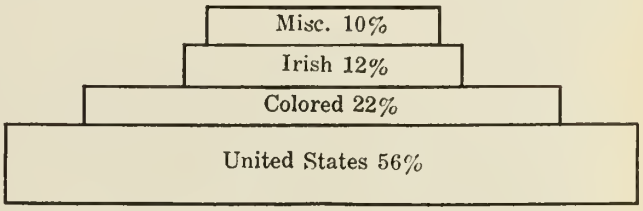
| Size of House | No. of People | No. of Families | Average Size Family | Percent | No. Rooms per Person | No. Persons per Room |
|---|---|---|---|---|---|---|
| 7 rooms or over | 336 | 52 | 6.46 | 13 | 1.11 | .95 |
| 6 rooms | 717 | 130 | 5.52 | 36 | 1.09 | .92 |
| 5 rooms | 300 | 60 | 5.00 | 15 | 1.00 | 1.00 |
| 4 rooms | 346 | 76 | 4.55 | 19 | .88 | 1.14 |
| 3 rooms | 65 | 18 | 3.61 | 4 | .83 | 1.20 |
| 2 rooms | 73 | 23 | 3.18 | 5 | .63 | 1.59 |
| 1 room | 99 | 32 | 3.09 | 8 | .32 | 3.09 |
| | 936 | 391 | .... | 100 | .... | .... |

American-born people of the Protestant faith predominate among the patients, Irish Catholics ranking second. As to religion the families classified as:

RELIGION

| | |
|---|---|
| Protestants | 499 |
| Roman Catholics | 367 |
| Jewish | 29 |
| Greek Orthodox | 1 |
| | 896 |

*Races.* Below is shown the relative proportion of the various race or national groups:




Miscellaneous consists of

| | | |
|---|---|---|
| Russian .....19 | Finnish ..... 2 | Armenian .... 1 |
| English .....17 | Polish ..... 2 | Danish ..... 1 |
| German .....16 | Roumanian ... 2 | Greek ..... 1 |
| Italian .....15 | Scotch ..... 2 | Hungarian .... 1 |
| Austrian ..... 4 | Swiss ..... 2 | Welsh ..... 1 |

Twenty-five were not citizens.

## SOCIAL NEEDS

The need for social service among these families is perhaps best shown by the fact that 144 of the thousand were already known to the department. In most instances this became obvious before the interview had progressed far, as no time had to be lost in overcoming a suspicious attitude. Many of the patients were eager in expressions of gratitude for services rendered in the home. Fifty-three additional cases were taken up by the social service, many of them as a result of the inquiry made at the door. The advantage of this was evident when several cases of acute need or serious family trouble were at once turned over to the social worker. Atrocious home conditions were also detected at the outset and home instruction begun without loss of time. A sick, homeless man was at once put in touch with the proper agencies. A number of "rounders," who habitually waste the time of dispensary doctors, were also spotted, giving an opportunity to turn them back to the hospital to which they properly belonged. Cases of abuse were also discovered before treatment had been given.

*Referred to Social Service.* Besides the cases taken up at once by the social service, many were referred which could not be handled because of the pressure of work. One hundred and thirty-eight families were noted as needing at least a visit of investigation to ascertain the needs. The advantage of such a visit is exemplified by the fact that in visiting to secure or verify interviews a number of needs were discovered which would otherwise have been unsuspected. The desirability of some regular follow-up system was glimpsed in the number of cases incidentally discovered where glasses had been ordered and never secured, a needed operation postponed indefinitely or a prescription had remained unfilled.

*Other Agencies.* The Bureau of Registration was used to ascertain what families were known

to charitable agencies. The result was as follows:

| | |
|---|---|
| Known to relief agencies | 97 |
| Other medical agencies | 56 |
| Other agencies | 81 |
| | 234—25% |

Of these 14 had applied to the Emergency Aid Committee.

CONCLUSION

A study of the foregoing will reveal, not only what a small percentage of people are abusing the privileges of the hospital, but will bring home with striking force how utterly impossible it would be for the vast majority of those patronizing the dispensary to pay for the kind of treatment and facilities it affords. In presenting the social factors an effort has been made to show the peculiar need of most of the people dealt with for the very best of medical skill, if the health of the community is to be conserved. Living as most of the patients do under adverse home conditions, undernourished and ignorant of the simplest rules of hygiene, the observer was constantly impressed with the overwhelming need for just such a reliable, accessible and inexpensive medical resource as the hospital affords.

Starting with an impression that in most cases it would be both practical and salutary to the patient's self-respect to charge a small fee for each visit, it became increasingly apparent to the investigator that the difficulty of deciding justly for each case on each visit as to the wisdom of charging, might largely vitiate the advantages of the system, while to charge a uniform fee with no exceptions would obviously work hardship to some families, resulting in the acceptance of money really needed for food or in keeping the patient away altogether, unless the inquiry made at the admitting desk were tactful and intelligent. A charge for each dispensary card would be feasible, however.

The personality and training of the admitting officer of a dispensary or hospital are of the highest importance. It has been intimated that, with social knowledge and skill in interviewing, this officer could practically eliminate abuse and could also discover at the outset cases in which the social need equals or transcends the physical. But the duties of this officer should cover much more than this, and as a matter of fact, his or her powers are even now (unfortunately) very great. For to the patrons of the hospital this point of first contact *is* the hospital, and too often the attitude of the admitting officer determines the opinion formed by the public. He it is, too, who has the best opportunity of gaining the full confidence and cooperation of the patient, for in this first interview his attitude is generally fixed for all time. The admitting desk is also the natural bureau of adjustment, and should form a link for the settlement of difficulties and the smoother coordination of the various departments.

Moreover, as general policies can only be carried out through numerous small decisions, upon the admitting officer must devolve much of the task of interpreting and applying the policies of the hospital. Therefore he should possess a clear conception of its aims and functions, as well as an intimate knowledge of the lives and needs of those who seek its aid. A broad education, social training and a rich, balanced personality is not too good an equipment for this position, and a proper recognition of its importance is one of the first steps toward humanizing, adapting and strengthening the work of the hospital.

While our economic system is such that vast numbers of people must remain underpaid, and overworked or unemployed, while the pressure of economic necessity forces children into unhealthful industrial conditions, without proper education or physical and mental development, the welfare of society demands that every effort should be made to at least preserve their physical efficiency. The hospital, with all its defects, is the best agent yet devised for attaining this end, and common prudence as well as humanity would seem to call for an extension rather than any curtailment of its functions.

The Presbyterian Hospital of Philadelphia, because of its location in a quarter of the city where housing, overcrowding and other adverse factors of environment do not vitiate the efforts of physicians, nurses and social workers, is peculiarly adapted to the development of a model dispensary system.

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### American Nurses in Europe

The nurses of the United States of America have given many demonstrations of their sympathy with their British colleagues, while the American Colony in Paris is maintaining a fine hospital for the wounded men of the Allied Nations at the Lycée Pasteur Hospital, and Miss Helen Scott Hay and her units are at work in Russia, and others in Serbia. Lately a unit of some 32 American doctors and a staff of 75 nurses arrived in this country, their services were accepted by the Director General of Medical Services, Sir Alfred Keogh, and on Friday, July 2d, they left for France to take up the work allotted to them in a large, new hospital. This unit comes chiefly from Chicago, and units from other great cities are prepared to follow suit. We need have no fear of a serious shortage of well trained nurses, whatever may be the exigencies we have to meet, so long as such generous help is given by our Colonies and our American friends, in whose ranks some of the best trained nurses in the world are to be found.—From the *British Journal of Nursing.*

Fig. 1 Albany Hospital, Albany, N. Y.

## THE TREATMENT OF MENTAL DISEASE IN A GENERAL HOSPITAL[1]

### Treatment of Mental Cases in the Early Colonial Hospitals Followed by Segregation of the Insane—The Need of Early Treatment—Restitution of the Original Plan in Modified Form to Provide in General Hospitals Preliminary Observation of Incipient Cases—Experience of the Pioneer Mental Pavilion in the Albany Hospital

By J. MONTGOMERY MOSHER, M. D., Attending Specialist in Mental Diseases, Albany Hospital

THE treatment of mental disease in a general hospital is a new idea, or rather a revival of an old one; it is the reversion to a principle, at once humane and scientific, recognized and abandoned long ago. The first hospital of America, the Pennsylvania Hospital, was granted a charter in colonial times, upon the petition of citizens of Philadelphia, for the care of "persons distemper'd in mind." And though this plea arose, in part, from the annoyance caused by these persons at large in the Province, it is worthy of note and highly creditable to the enlightened and humane instinct of the colony, that the greater motive was the relief of suffering, for the experience of an ancient institution had shown that "above two-thirds of the mad people received into Bethlehem Hospital, and there treated properly, have been perfectly cured."

This high conception of duty entertained by the founders of the Pennsylvania Hospital was felt elsewhere, and seventy years later the municipal hospitals in Boston and New York made provision for the insane.

But difficulties arose to prevent the permanence of the plan. The chief of these seems to have been the increasing number of patients, with restricted accommodations; and eventually separate provision was made for the insane in distant and specially constructed buildings. There is no record of the reasons for this change, but the accumulation of chronic cases, and the resulting turbulence, may be assumed to have been effective in modifying the original design, and in forcing a distinction between mentally and physically afflicted patients. Active treatment was not neglected in the separate departments of the hospitals in Philadelphia, Boston and New York, which have always represented the best in mental practice, but the feature of custodial care was inevitable.

And so there has been a gradual drifting away from the gentler conception of the forefathers, who saw fellow-beings only "distemper'd in mind" and susceptible of restoration, toward a merely perfunctory or necessary toleration of the growing army of the insane. Words or phrases express a good or evil thought only as they are interpreted: the term "insanity," though generically not of ominous significance, has come to represent in the popular mind the state of an outcast, an individual to be feared and avoided. The state has assumed the burden of care, with the incidental segregation of the insane as a distinct class. The statutory and fiscal regulation

[1]This is the eighth and last in a series of papers on "The Government of State Hospitals for the Insane." Last month appeared "Nurse Training in Mental Hospitals."

Fig. 2. Albany Hospital, Albany, N. Y. Hospital grounds. Pavilion F is indicated by an arrow.

to bring about this modern provision has resulted in a system of judicial procedure and restriction not always beneficial to the patient, and often antagonistic to scientific medical progress.

The effect has been the postponement of proper treatment until the disease has so far advanced as to render help futile, for the patient himself and his friends are reluctant to approach a court for a judicial declaration of insanity until such a step is unavoidable. It is not then taken with a view to cure, but upon the abandonment of hope, as a measure of safety. The large public hospitals, though proposed and developed by physicians upon medical principles, have become largely custodial, are popularly associated with this function, and are deprived of the utilization of their splendid resources for early treatment and cure. If this condition of affairs be regarded as susceptible of unfavorable criticism, it must be borne in mind that only during the last twenty-five years have hospitals, either special or general, been accepted as necessary to the treatment of disease. Prior to that time they were institutions for the care of indigent persons who had no place or convenience at home under the visitation of sickness of whatever character. Modern surgery demanded resources and exactness not to be found in the private house; following closely upon the requirements of surgery came the laboratory and clinical analyses associated with the diagnosis and treatment of internal diseases, and hospitals were thronged by rich and poor alike.

There is no valid reason why municipal general hospitals should not include the victims of mental affections as well as those of surgical and general internal diseases. Indeed, when one attempts to find phrases for distinguishing mental diseases from others, language fails to supply the terms. If it be argued that special buildings are needed, the same objection may be made to the admission of either surgical or communicable diseases. The most elaborate structures are demanded for surgery, and their administration is conducted with the precision of military service. This is also true of contagious disease. The idea of a modern hospital rejects as primitive any plan contemplating a building in which adjoining rooms serve for the admission of any patient who may apply. Classification is the first essential, and may include mental cases, whose appeal is as urgent as it was one hundred and fifty years ago, and whose needs are less exacting than those of many patients now received without question. The line which separates them is a very indistinct one: it is often imaginary and always traditional. There is practically no dis-

Fig. 3. Albany Hospital, Albany, N. Y. Pavilion F. Room for excited patient, showing sliding wire screen for window.

ease, surgical or medical, in which the action of the mind is not involved, though this is not always so serious as to demand special therapeusis. Yet any attempt at definition of insanity fails in the presence of the delirium of fever, the intoxication of alcohol or drugs, or the shock of injuries. The mental complications of Bright's disease, diabetes, tuberculosis, numerous lesions of the nervous system, functional disorder of the digestive apparatus, may frequently assume greater relative proportion than the pathological state causing them, and yet one hesitates to designate the patients as insane. On the other hand, the mental symptoms often appearing during the various crises and the stress of life, manifestations of an exhausted nervous system, present such palpable evidence of physical origin that the restoration of health becomes a purely medical problem, usually, under proper conditions, to be brought to a satisfactory solution. To look over and beyond the readily available resources of a local hospital to a court of law and a distant institution buried in red tape and legal restrictions might be regarded as justifying professional protest.

There are signs of a reaction toward the simpler methods of the earlier day, when the benevolent purpose of the founders and physicians of America's first hospital were not questioned, and mental cases were entitled to whatever was best in practice.

The Albany Hospital appears to have been the first in the United States to revive the ancient practice. The old hospital, originally a jail in the center of the city, was abandoned in 1898, and a series of pavilions with connecting corridors was erected upon an elevated and picturesque plateau of the suburbs. Accommodations were provided for surgical, medical and midwifery cases, and were extended in 1902 by the addition of a pavilion for mental cases, in 1906 by a detached building for communicable diseases, and in 1910 by the purchase of a tract of wooded, sandy land, for a tuberculosis sanitarium. The successful coordination of these departments and harmonious relations with the public authorities have demonstrated the feasibility of this comprehensive plan. The total number of beds for patients is four hundred and ninety, which may be increased in emergency to over five hundred and sixty.

The organization is that of a corporation for charitable purposes. The board of governors, selected from prominent citizens of the city of Albany, serves without remuneration, and directs the policy of the hospital. The superintendent is a physician, who, fortunately for the mental department, has had early training in a hospital for the insane. The resident staff consists of ten interns, one of whom is assigned to the mental wards, with additional duty in the clinical lab-

oratory and on ambulance call. The training school for nurses, under direction of the superintendent of nurses, gives instruction to comply with the requirements of law and the state department of education, and equips nurses for state registration. The mental wards are in charge of a graduate nurse with special training, who directs the work of the pupil nurses. The wards for men, as well as for women, are administered by the nurses. The medical service of the mental wards is entirely under the direction of the attending specialist in mental diseases, who is a member of the visiting staff.

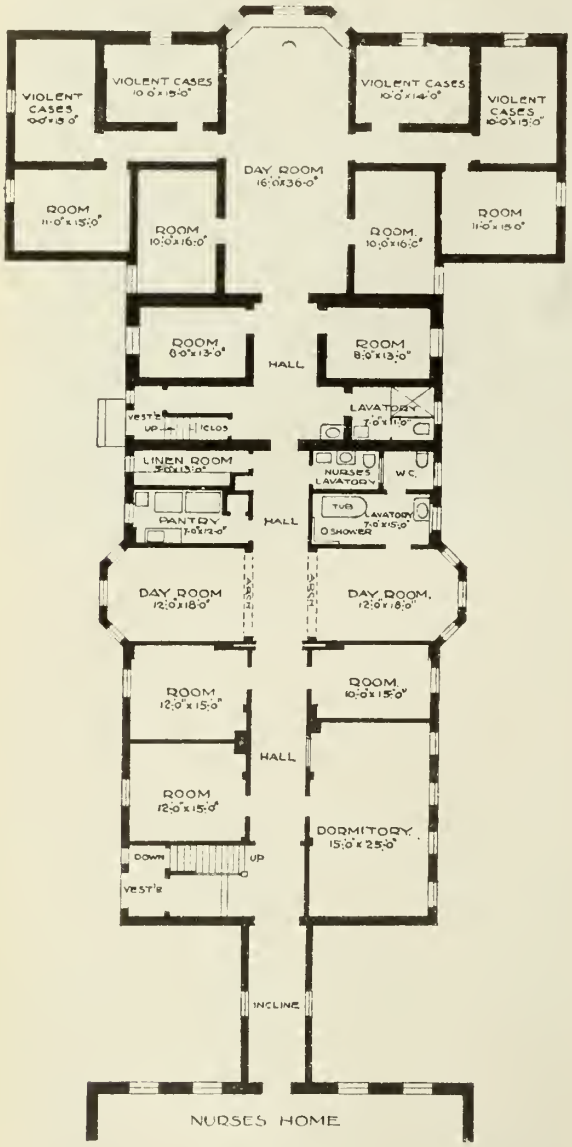


Fig. 4. Albany Hospital, Albany, N. Y. First and second floor plans of Pavilion F (department of mental diseases).

The pavilion for mental diseases, known as "Pavilion F," is in the rear of one of the pavilions off the main corridor, is somewhat remote from the activities of the hospital, and may be reached through the basement of the adjoining building, though for public use, for patients and visitors, the outer door is utilized. This remoteness favors privacy, and has been found particularly advantageous in relieving patients from the commotion and activities of the general wards.

The building is of two stories, the first for women patients and the second for men. Each floor is divided into two distinct departments, separated by double doors. In front are three private rooms and a dormitory of four beds; a transverse sitting room, fully lighted at each end by large bow windows; water section, pantry and linen room. In the rear the sitting room is on the long axis of the building, with two rooms on either side and a separate lavatory. For the better segregation of disturbing patients, cross corridors extend on either side, leading to three rooms each. Three of these six rooms are equipped with wire screens protecting the windows and heavy doors, and in four the beds are bolted to the floor. The remaining three rooms are neatly furnished, attractive and not different from other rooms of the hospital. These have proved most satisfactory in providing isolation for patients whose unavoidable expressions of anguish would otherwise distress their neighbors. Many cases of uncompensated heart disease, nephritis, neuritis, rheumatic fever, old age, surgical conditions and the like have been properly cared for in these rooms, as well as pure mental cases whose restlessness has not been manifested in destruction or violence.

This plan of construction has proved successful in classifying patients of widely different characteristics. There are occasional periods when crowding has proved embarrassing, a condition which occurs in any active institution, but after the experience of twelve years there is suggested no change which could better meet the demands of so compact a building. If it were to be done again, without too great restriction in funds, it is believed no other design would prove more effective and no change would be made beyond concession to the modern ideas of greater liberality in bath room and lavatory facilities, and of improved devices for illuminating, signaling, and the like.

Nine pupil nurses are regularly assigned to this service, distributed as follows: day service, first floor, four, second floor, two; night service, first floor, two, second floor, one. Upon the second floor are two male orderlies, one for day duty and one for night duty. The orderlies have no authority, and are under direction of the nurses. A ward maid on each floor prepares the food and assists in housekeeping. All nurses are under the immediate direction and instruction of the

head nurse. During the night several visits are made by the night supervisor, and hourly inspection is made by the night watchman, who registers a station on each floor. The term of practical instruction for pupil nurses is at least ten weeks. An estimate of the ratio of nurses to patients is not feasible owing to the frequent changes in population and the employment or assignment of special nurses. The need of special nurses in individual cases is determined by the attending physician and in critical cases one or two are detailed, as circumstances require. The extent of personal care rests upon several factors. Frequently the apprehension of the patient may be relieved by constant attendance, with resulting acquaintance and sense of protection, and this is practically invariable on admission. In cases of active delirium and frenzy seclusion is least exasperating to the patient, and watchfulness is enjoined. This obviates the need of mechanical restraint. Mechanical restraint is applied only for the protection of operation wounds, and in cases of critical exhaustion; it is never permitted without the presence of the nurse or without open doors. The form of restraint is a sheet drawn across the bed, and in very rare cases temporary restriction of the limbs, to the extent of protecting both the patient and the nurse. The need of restraint exists for a few hours or a few days, and the total number of patients for whom it is used is very small. No mechanical appliances of any kind have ever been procured.

The simple rule for the guidance of nurses, and the effect of training in this department, are concisely stated by Miss Hearle, the principal of the school: "All persons employed in these wards, nurses, orderlies and maids, fully understand the rule that patients are not to be coerced, or their liberty of action interfered with unless they show a desire to injure themselves or others. The training in Pavilion F is of infinite value in the education of a nurse. In dealing with these patients the most timid young woman learns the absolute necessity for self-control and the folly of showing fear. She also has the opportunity to practice the patience so strongly advocated in her theoretical training."

To ascribe the good results of treatment to the efficiency of the nurses may seem a trite comment; but the question of nursing is much more vital than that of buildings or of drugs. The conditions of a general hospital differ from those of an institution for the insane, many of whose nurses are permanently stationed and habituated to established routine. Here there is little routine. The rapid reception of new cases, whose symptoms and personality must be quickly apprehended, each successive admission presenting a novel phase, and the frequent changes in nurses, each one equipped with general principles only and strange to the work, are factors in an active and exacting service. In a single course of instruction are contrasted the extremes between the prompt, arbitrary and almost relentless decision of the surgeon with the temporizing and compromising policy which should always guide the management of mental cases. The indications for certain measures may be patent at once: their application without detriment demands a refined discretion. The physician's orders are given with the reservation that they are to be carried out only with the acquiescence of the patient. This failing, the manner of approach is modified. Nurses are instructed that the excitement of nervous affections is paroxysmal, and that the intervals may be utilized for the administration of remedies. This principle is soon understood; it obviates friction, lessens fear and promotes friendly relations. Expressions of gratitude to the nurses by patients leaving the hospital are customary, and have given an encouraging estimate of the successful attainment of a difficult task. It has been found that acquaintance with general nursing in the other wards of the hospital is an equivalent for long experience, and establishes a general tone of sympathy and understanding of the claims and rights of sick people as a class.

Food is brought to the serving rooms by dumbwaiter from the general kitchen, and dishes are also specially prepared in the nurses' dietary kitchen. In the serving room it is kept heated and meals are arranged on individual trays which are distributed to patients wherever they desire. The dietary is liberal in quantity and quality, for the need of tempting viands is appreciated. Milk and eggs are supplied in abundance as staples in cases of exhaustion and delirium. The result of generous catering, in accord with the conciliatory plan of treatment, is shown in the facts that recourse to forcible feeding is rare, probably not being required once a year.

Patients may be broadly grouped in two classes: those for whom proceedings in lunacy have been instituted, awaiting transfer to a hospital for the insane, and those who enter voluntarily. To these may be added a third group of patients received in the emergency of delirium or stupor, whose symptoms require analysis before determining whether a passing or a permanent mental disqualification is present. In this class may be included the numerous temporary transfers from the medical and surgical wards of the hospital, and from other hospitals of the city. The number

of admissions from February 18, 1902, when the pavilion was opened, to September 30, 1914, was three thousand, one hundred thirty-two. Of these one thousand, six hundred seventy have been discharged to their homes recovered or improved; one thousand, one hundred thirty-five have been discharged unimproved, many of these for transfer to institutions for the insane; and two hundred and fifty-six have died.

The problem of the discharge of patients has revealed many interesting questions. With the exception of those awaiting transfer under commitment, all patients are admitted upon the voluntary basis. That they are willing to come and to stay is evidence of the subjective appreciation of need of help, even in a disordered mind. If there is resistance or discontent those responsible are requested to remove the patient, either by commitment or by a return home. Instances of this kind are relatively infrequent, but the practice is rigid, as every appearance of detention is avoided. It has further been found advisable to discharge many patients on the disappearance of active symptoms, upon the theory that the acute mental attack represents the culmination of a long period of gradually increasing nervous exhaustion. The awakening to the fact of mental incompetency arouses a state of apprehension, which is best relieved by the encouraging decision that hospital resources are no further needed. This explains the relatively short residence, and has been generally followed by continued convalescence and recovery.

A retrospect of the history and experience of this pavilion shows a gradual extension of its resources and a more liberal interpretation of the idea upon which it was established. Although it retains its function of temporary relief, there has developed a broader conception of the possibilities of successful treatment of mental cases on the same basis as of other patients in the hospital. The original thought of a department distinct from the others has been lost in the adaptation of a comprehensive organization into one coordinating institution. As years pass and new officials appear, the hospital is regarded as an established fact, and service is accepted in one department or another as a matter of routine. There is no greater hesitancy in the assumption of duty in the mental pavilion than in that for contagious diseases or in the tuberculosis sanitarium. Accessibility to the community and to the friends and families of patients has established public recognition of a special curative work, which has robbed insanity of many of its horrors, and has advanced popular knowledge of mental disturbances as manifestations of disease.

Some few attempts to utilize means of diversion and entertainment from the traditions of institutions for the insane have failed. A piano, placed upon the women's ward for a season proved an annoyance; and a billiard table upon the men's ward has provided amusement for a few, but has had little remedial value in any case. It is plainly shown that the work is that of a general hospital, and must be conducted upon the plan of the general hospital. There is no propriety in an attempt to establish a modified institution for the insane upon the grounds of a general hospital.

There is a place for a broader scientific spirit in the early study of mental diseases, or, more properly, of the mental complications of physical disease; and there may be less precipitancy in declaring insane many persons whose morbid thought and action are transient and subject to correction by rational therapeutic measures. If there be any fear on the part of general hospitals of disorganization or difficulty in providing accommodations for patients, many of whom are now of necessity improperly treated upon their wards, it may be dismissed. The question presented is not that of establishing an asylum, but rather that of the addition of suitable rooms and wards for the treatment of complicated cases, and for the general rounding out and completion of an otherwise inadequate equipment. To designate acute mental cases arising from impoverished or poisoned nervous systems as the result of general exhaustion, or arising from fever, accident, injury, shock, diseases of the kidneys, heart, lungs, blood, digestive organs, glands, or what not, as "insane," or "apparently insane," and in need of the jurisdiction of the court or the supervision of the state, is an amateur interpretation of the fundamental principles of the practice of medicine. To deal scientifically with those "distemper'd in mind" appears to be a step forward, even though, as a repetition of history, it carries us back to the broad-minded and humane spirit of our ancestors of a century and a half ago.

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**New York Enforces Birth Registration**

Dr. Herman M. Biggs, state commissioner of health, is determined to enforce the vital statistics article of the New York health law. The district attorneys throughout the state have been supplied with lists of offending physicians, and requested to warn them that in future they "shall, for the first offense, be fined not less than $5.00 nor more than $50.00, and for each subsequent offense not less than $10.00 nor more than $100.00, or be imprisoned in the county jail not more than sixty days, or be both fined and imprisoned, at the discretion of the court," as provided by the state law.

## CONDENSED MILKS AND CASEIN PREPARATIONS

### Cows' Milk Is Not a Perfect Food, Notwithstanding Current Opinion—Faulty Condensed Milk Formulae

By JOHN PHILLIPS STREET, M. S., Chemist, Connecticut Agricultural Experiment Station

MILK is almost unique among animal foods in that it contains all three of the essential nutrients, protein, carbohydrates and fat. Its mineral content, while small, is remarkable in that it contains the different ingredients, possibly excepting iron, in practically the same proportion as found in the body of the young animal which the particular kind of milk is designed to feed.

It is frequently claimed that milk is a perfect food. It is true, as stated above, that it contains all the nutritive ingredients required by the body, but it contains too much protein and fat, and too little carbohydrate to be a perfect food. Its bulk likewise is too great for a perfect food, a healthy man doing moderate work requiring about four quarts daily for maintenance. Milk is also so easily absorbed that insufficient unabsorbed matter remains, and constipation usually results from its continued and excessive use. Lastly, it is by no means an inexpensive food; the four quarts necessary for a daily diet would cost from 32 to 36 cents, while many of our ordinary mixed diets cost less than two-thirds of this amount. On the other hand, milk is probably the cheapest source of animal protein, and therefore is well suited as a dietary supplement. Skimmed milk is naturally even cheaper than whole milk for this purpose, and the importance of this defatted food will be considered in a later section of this paper.

The importance of milk in the feeding of children is too well known to require any discussion at this time. Likewise its value in the diet of the sick scarcely needs emphasis in a paper addressed to the readers of The Modern Hospital.

The variability in the composition of milk, however, is perhaps not sufficiently appreciated by the average physician. Its composition varies with the breed of cow, the period of lactation and the season. Cows far along in lactation give richer milk than just after calving; and milk in summer is inferior to winter milk, in spite of the popular opinion to the contrary. Very often the entire diet of children and invalids consists of milk, and the doctor prescribing so much "milk" per day rarely knows just how much nutriment he is supplying.

Lythgoe has recently published (Jour. Ind. Eng. Chem., 6, 899) certain analyses made by him during the past six years of milk of known purity from the leading dairy breeds of cattle. The averages secured by him are shown in Table 1.

Table 1

Composition of Milk of Known Purity from Individual Cows

| Breed | No. of Cows | Solids | Fat | Protein | Ash | Lactose |
|---|---|---|---|---|---|---|
| Jersey | 36 | 14.75 | 5.65 | 3.46 | 0.72 | 4.94 |
| Guernsey | 28 | 14.60 | 5.23 | 3.73 | 0.75 | 4.84 |
| Grade Jersey | 27 | 13.74 | 4.65 | 3.45 | 0.75 | 4.87 |
| Grade Guernsey | 20 | 13.20 | 4.35 | 3.27 | 0.72 | 4.94 |
| Grade Durham | 16 | 13.10 | 4.29 | 3.39 | 0.73 | 4.86 |
| Grade Ayrshire | 52 | 12.98 | 4.22 | 3.22 | 0.75 | 4.85 |
| Ayrshire | 27 | 12.64 | 4.01 | 2.99 | 0.76 | 4.88 |
| Grade Holstein | 131 | 12.62 | 3.95 | 3.25 | 0.73 | 4.65 |
| Dutch Belt | 41 | 12.15 | 3.56 | 2.96 | 0.70 | 4.93 |
| Holstein | 56 | 11.69 | 3.41 | 2.93 | 0.72 | 4.70 |
| All breeds | 434 | 12.98 | 4.21 | 3.27 | 0.76 | 4.78 |

It will be noted that the solids ranged from 11.69 to 14.75 per cent, and the fat from 3.41 to 5.65; the lower percentages being shown by Holsteins and the higher by Jerseys. The protein varied within rather narrow limits, while the ash and lactose were remarkably constant in all the breeds.

Because of the variability in the composition of milk, because of its poor keeping qualities, and because of its liability to bacterial and bacillary contamination, manufactured milk products, in which these objections are more or less removed, have a peculiar interest to the dietitian. It is to certain of these manufactured and proprietary milk foods that I wish to refer in this paper. The proprietary infant foods, an increasingly large group, will be discussed in a subsequent paper, as will also cheese, whose value in the diabetic dietary has not been sufficiently appreciated.

#### CONDENSED OR EVAPORATED MILKS

These are widely used not only in the home but also in the feeding of infants and invalids. The terms "condensed" and "evaporated" as applied to milk have been rather loosely used in the past. The term "evaporated" has generally been applied to milk which had been concentrated by evaporation under reduced pressure with more or less heat, but without the addition of any cane sugar. The term "evaporated cream" was always a misnomer, as the product was similar to cream only in consistency. Legal enactments and the practice of the better class of manufacturers have caused almost a complete discontinuance of this term. "Condensed" milk, on the other hand, is popularly applied to evaporated milk to which more or less cane sugar has been added to aid in its preservation. As a matter of fact brands are found on the market where the original significance of the two terms is entirely lost, and much confusion accordingly has resulted. The Federal Committee on Food Definitions and Standards now recognizes the terms "condensed" and

"evaporated" as applied to milk as synonymous, and suggests the use of the prefixes "sweetened" or "unsweetened," as the case may be, to prevent misunderstanding.

It is obvious that the quality of a condensed milk must depend primarily upon the quality of the original milk, upon the degree of concentration and upon the skill with which this concentration is effected. If skimmed or partially skimmed milk is used as raw material the resultant product will necessarily be deficient in milk fat; a highly concentrated milk will, of course, be richer than one of less concentration made from the same original milk; excessive heat will give the product an unpleasant cooked taste, and poor methods of manufacture will produce granulation, grittiness and

Table 2
Analyses of Condensed Milks

| *Connecticut analyses.* | Water | Solids | Sucrose | Milk Solids | Ash | Protein | Lactose | Fat |
|---|---|---|---|---|---|---|---|---|
| Condensed milk, unsweetened, maximum | 75.27 | 31.07 | ..... | 31.07 | 1.85 | 8.75 | 11.99 | 10.20 |
| Contensed milk, unsweetened, minimum | 68.93 | 24.73 | ..... | 24.73 | 1.29 | 6.70 | 8.75 | 7.20 |
| Condensed milk, unsweetened, average | *71.68* | *28.32* | ..... | *28.32* | *1.60* | *7.67* | *10.64* | *8.41* |
| Condensed milk, sweetened, maximum | 31.32 | 78.33 | 44.83 | 41.52 | 2.16 | 9.81 | 22.85 | 10.07 |
| Condensed milk, sweetened, minimum | 21.67 | 68.68 | 29.22 | 30.27 | 1.50 | 7.82 | 11.28 | 6.90 |
| Condensed milk, sweetened, average | *26.36* | *73.64* | *40.20* | *33.44* | *1.82* | *8.54* | *13.98* | *9.10* |
| *Typical analyses (Leach).* | | | | | | | | |
| Condensed milk, unsweetened. | | | | | | | | |
| High fat | 64.00 | 36.00 | ..... | 36.00 | 1.72 | 11.63 | 10.65 | 12.00 |
| Low protein | 68.75 | 31.25 | ..... | 31.25 | 1.23 | 7.02 | 13.40 | 9.60 |
| Normal | *71.84* | *28.16* | ..... | *28.16* | *1.55* | *8.66* | *9.85* | *8.10* |
| Made from skimmed milk | 64.83 | 35.17 | ..... | 35.17 | 1.70 | 15.37 | 13.90 | 4.20 |
| Condensed milk, sweetened. | | | | | | | | |
| High fat, high sucrose | 20.83 | 79.17 | 47.85 | 31.32 | 1.80 | 7.95 | 9.57 | 12.00 |
| High fat, low lactose | 31.30 | 68.70 | 38.43 | 30.27 | 1.73 | 10.70 | 6.38 | 11.46 |
| Low fat, high lactose | 30.70 | 69.30 | 37.47 | 31.83 | 1.54 | 6.34 | 16.75 | 7.20 |
| Normal | *25.71* | *74.29* | *41.92* | *32.37* | *1.29* | *8.46* | *11.97* | *10.65* |
| Made from skimmed milk | 30.70 | 69.30 | 40.15 | 29.15 | 2.05 | 12.15 | 11.89 | 3.06 |
| Made from centrifugally skimmed milk | 30.94 | 69.06 | 43.18 | 25.88 | 2.46 | 11.78 | 11.55 | 0.09 |

other undesirable features. The integrity of the raw material and the skill of the manufacturer are therefore of great importance as influencing the quality of the manufactured product. The unsweetened milk is quite apt to spoil after the can has been opened. It should therefore be kept in a cold place pending use, and quite the same precautions taken for its preservation as for raw milk. Indeed, it has been suggested that manufacturers should pack such milk in cans holding only enough for a day's supply. While this would doubtless increase the cost, the suggestion possesses obvious advantages. The sweetened condensed milk keeps much better, but even this should be kept in a cold place after opening.

The sweetened and unsweetened condensed milks show striking differences in composition. The above table (No. 2) gives the maxima, minima and averages of a large number of samples analyzed in the writer's laboratory, together with certain typical analyses reported by Leach.

It will be noted that while the sweetened milks on the average contain somewhat more fat than the unsweetened, the large amount of cane sugar added necessitates a considerable dilution before use. The dilution necessary to minimize this excessive sweetness reduces the proportion of protein and fat far below that found in normal milk. The directions as to dilution generally recommended on the label, if followed, will give a product far inferior to cow's milk of good quality, and totally unsuited for some of the purposes for which condensed milks are recommended. The labels of most brands of condensed milks give directions for its use as a drink, alone or with tea or coffee, as a cooking adjunct, or as a food for infants. The writer has calculated from actual analyses just what mixtures would be obtained when the condensed product was treated exactly as directed on the label, both for general use and for infant feeding. A few of these calculations for mixtures intended for general use are shown in Table 3, the brand names being omitted, as the composition of the different brands, as a rule, varies more or less from year to year:

Table 3
Composition of Mixtures of Condensed Milk and Water Prepared as Directed for General Use

| Brand | Proportion of Milk to Water | Water | Milk Solids | Sucrose | Ash | Protein | Lactose | Fat |
|---|---|---|---|---|---|---|---|---|
| *Sweetened.* | | | | | | | | |
| A | 1 to 4 or 5 | 86.6 | 5.5 | 7.9 | 0.3 | 1.5 | 2.0 | 1.7 |
| B | 1 to 3 or 4 | 83.1 | 7.5 | 9.4 | 0.4 | 1.9 | 3.0 | 2.2 |
| C | 1 to 4 or 5 | 87.2 | 6.8 | 6.0 | 0.3 | 1.5 | 3.4 | 1.6 |
| D | 1 to 1 or 2 | 71.6 | 12.7 | 15.7 | 0.6 | 3.4 | 5.1 | 3.6 |
| E | 1 to 4 or 5 | 87.2 | 6.4 | 6.4 | 0.4 | 1.5 | 3.0 | 1.5 |
| F | 1 to 3 or 4 | 84.7 | 8.8 | 6.5 | 0.4 | 1.8 | 4.5 | 2.1 |
| *Unsweetened.* | | | | | | | | |
| G | 1 to 1 or 2 | 90.1 | 9.9 | ... | 0.6 | 2.7 | 3.5 | 3.1 |
| H | 1 to 3 | 92.9 | 7.1 | ... | 0.4 | 1.9 | 2.6 | 2.2 |
| I | 1 to 1 or 2 | 89.9 | 10.1 | ... | 0.5 | 2.8 | 3.9 | 2.9 |
| J | 1 to 1 or 2 | 88.4 | 11.6 | ... | 0.6 | 3.0 | 4.4 | 3.6 |
| K | 1 to 3 | 93.5 | 6.5 | ... | 0.4 | 1.8 | 2.3 | 2.0 |

Among the sweetened milks, aside from brand D, none of the resultant mixtures would contain normal quantities of milk solids and fat, and even this brand would contain a great excess of cane sugar. The other milks would yield products containing from 5.5 to 8.8 per cent of milk solids, and from 1.5 to 2.2 per cent of fat; in other words, a mixture only a little over half as rich as milk of good quality. No brand of sweetened condensed milk can be diluted with more than 1.5 parts of water to one of milk and yield a product which equals

good fresh milk in fat content. Among the unsweetened milks brand J was the only one yielding a product even approaching good milk in richness. For cooking purposes and for a beverage, deficiency in fat may be of comparatively minor importance, although the nourishing qualities of the product are thereby reduced. In infant feeding, however, where fat is a most essential ingredient in the milk, and where cane sugar, in the opinion of many physiologists, is especially to be avoided, the composition of the milk obtained by following the manufacturer's directions is of the greatest importance. Condensed milk is largely used for feeding infants and young children and it is exceedingly important that the parents, and

Table 4
Analyses of Human Milk

| Days after birth of child | No. of Analyses | Total Solids | Ash | Protein | Lactose (Anhydrous) | Fat |
|---|---|---|---|---|---|---|
| 1-3 (colostrum)..... | 4 | 12.65 | 0.41 | 3.25 | 4.96 | 2.92 |
| 5-6 ..... | 3 | 12.09 | 0.30 | 1.83 | 5.83 | 3.26 |
| 6-12 ..... | 10 | 12.12 | 0.28 | 1.73 | 6.16 | 3.11 |
| 20-40 ..... | 15 | 12.48 | 0.22 | 1.30 | 6.52 | 3.91 |
| 60-140 ..... | 14 | 11.79 | 0.19 | 1.10 | 6.81 | 3.31 |
| 170 and over..... | 10 | 11.44 | 0.18 | 0.94 | 6.78 | 3.20 |

A comparison of the calculated composition of the mixtures made for infants of different ages, according to the directions indicated, with the composition of human milk at the same age periods of the child, shows how deficient a diet, as compared with mother's milk, is furnished if the

Table 5
Composition of Mixtures for Infant Feeding Prepared as Directed

| Brand and Age of Infant | Proportion of Milk to Water | Water | Milk Solids | Sucrose | Ash | Protein | Lactose | Fat |
|---|---|---|---|---|---|---|---|---|
| *1st week* | | | | | | | | |
| 1 | ½ teaspoonful milk, ¼ teaspoonful sugar, 1 ounce water.... | 95.47 | 1.50 | 3.03 | 0.09 | 0.41 | 0.53 | 0.47 |
| 2 | ½ teaspoonful milk, ¼ teaspoonful sugar, 1 ounce water.... | 95.21 | 1.76 | 3.03 | 0.09 | 0.46 | 0.66 | 0.55 |
| 3 | ½ teaspoonful milk, ¼ teaspoonful sugar, 1 ounce water.... | 95.25 | 1.72 | 3.03 | 0.10 | 0.43 | 0.65 | 0.54 |
| 4 | ½ teaspoonful milk, ¼ teaspoonful sugar, 1 ounce water.... | 95.19 | 1.78 | 3.03 | 0.10 | 0.48 | 0.66 | 0.54 |
| *Average* | | *95.28* | *1.69* | *3.03* | *0.10* | *0.45* | *0.62* | *0.52* |
| *1st month* | | | | | | | | |
| 5 | 1 to 13 | 94.59 | 2.34 | 3.07 | 0.13 | 0.62 | 0.88 | 0.71 |
| 6 | 1 to 6 or 7 | 96.21 | 3.79 | .... | 0.18 | 1.02 | 1.41 | 1.18 |
| 7 | 1 to 13 | 94.92 | 2.96 | 2.12 | 0.13 | 0.56 | 1.63 | 0.64 |
| 8 | 1 to 14 or 16 | 95.61 | 2.18 | 2.21 | 0.12 | 0.53 | 1.03 | 0.50 |
| 9 | 1 to 14 or 16 | 95.48 | 1.98 | 2.54 | 0.11 | 0.49 | 0.78 | 0.60 |
| 10 | 1 to 14 or 16 | 95.30 | 1.95 | 2.75 | 0.12 | 0.50 | 0.75 | 0.58 |
| *Average* | | *95.35* | *2.53* | *2.12* | *0.13* | *0.62* | *1.08* | *0.70* |
| *2 months* | | | | | | | | |
| 5 | 1 to 11 | 93.69 | 2.73 | 3.58 | 0.15 | 0.73 | 1.02 | 0.83 |
| 6 | 1 to 5 or 6 | 95.63 | 4.37 | .... | 0.21 | 1.18 | 1.62 | 1.36 |
| 7 | 1 to 11 | 94.07 | 3.46 | 2.47 | 0.15 | 0.66 | 1.90 | 0.75 |
| 8 | 1 to 12 or 14 | 94.99 | 2.49 | 2.52 | 0.14 | 0.60 | 1.18 | 0.57 |
| 9 | 1 to 12 or 14 | 94.82 | 2.28 | 2.90 | 0.12 | 0.57 | 0.90 | 0.69 |
| 10 | 1 to 12 or 14 | 94.63 | 2.22 | 3.15 | 0.13 | 0.57 | 0.86 | 0.66 |
| *Average* | | *94.64* | *2.93* | *2.43* | *0.15* | *0.72* | *1.25* | *0.81* |
| *3 months* | | | | | | | | |
| 5 | 1 to 10 | 93.12 | 2.97 | 3.91 | 0.16 | 0.79 | 1.11 | 0.91 |
| 7 | 1 to 10 | 93.53 | 3.78 | 2.69 | 0.16 | 0.72 | 2.08 | 0.82 |
| 9 | 1 to 10 or 12 | 93.97 | 2.64 | 3.39 | 0.14 | 0.66 | 1.04 | 0.80 |
| 10 | 1 to 10 or 12 | 93.74 | 2.59 | 3.67 | 0.16 | 0.67 | 0.99 | 0.77 |
| *Average* | | *93.59* | *3.00* | *3.41* | *0.15* | *0.71* | *1.31* | *0.83* |
| *3-6 months* | | | | | | | | |
| 8 | 1 to 8 or 10 | 92.98 | 3.49 | 3.53 | 0.20 | 0.84 | 1.66 | 0.79 |
| *6 months* | | | | | | | | |
| 5 | 1 to 9 | 92.43 | 3.27 | 4.30 | 0.18 | 0.87 | 1.23 | 0.99 |
| 7 | 1 to 9 | 92.88 | 4.16 | 2.96 | 0.18 | 0.79 | 2.29 | 0.90 |
| *Average* | | *92.65* | *3.72* | *3.63* | *0.18* | *0.82* | *1.76* | *0.95* |
| *6-12 months* | | | | | | | | |
| 8 | 1 to 6 or 8 | 91.22 | 4.36 | 4.42 | 0.25 | 1.05 | 2.07 | 0.99 |
| *One year* | | | | | | | | |
| 5 | 1 to 6 | 89.18 | 4.68 | 6.14 | 0.26 | 1.25 | 1.75 | 1.42 |
| 6 | 1 to 3 | 92.90 | 7.10 | .... | 0.33 | 1.91 | 2.64 | 2.22 |
| 11 | 1 to 3 or 4 | 93.68 | 6.32 | .... | 0.32 | 1.70 | 2.40 | 1.90 |
| 7 | 1 to 6 | 89.84 | 5.93 | 4.23 | 0.25 | 1.13 | 3.26 | 1.29 |
| 9 | 1 to 6 or 7 | 90.35 | 4.23 | 5.42 | 0.23 | 1.05 | 1.67 | 1.28 |
| 10 | 1 to 6 or 7 | 89.99 | 4.14 | 5.87 | 0.25 | 1.07 | 1.59 | 1.23 |
| *Average* | | *90.99* | *5.40* | *3.61* | *0.27* | *1.35* | *2.22* | *1.56* |

even physicians and nurses, should not be misled by erroneous directions. Table 4 gives calculations similar to the above for mixtures intended for infant feeding.

It is well known that the composition of human milk changes greatly with the period of lactation, the first milk, the colostrum, being very rich in nitrogenous bodies and relatively deficient in milk sugar; after six months the composition becomes relatively constant. The following analyses made by Camerer and Söldner (Zeit. Biol. 36, 277) indicate these variations in composition:

manufacturer's directions are followed. This criticism applies to every brand in the table, for in no case do the mixtures even approximate the composition of human milk in all the ingredients. Nor could this condition with the sweetened milks be remedied entirely even by the addition of cream, cod liver oil or some similar oil, and milk sugar, for there will always be an excess of cane sugar present, even when its addition is not specifically directed. The desirability of the presence of cane sugar in the diet of very young children is a matter of much controversy among

physiologists, yet each of the four brands of unsweetened milk, which recommends a formula for infants one week old, directs that cane sugar shall be added, making up nearly two-thirds of the solids of the mixture. The following summary shows the average relation of these mixtures to human milk at the period specified:

RELATION OF CONDENSED MILK MIXTURE TO HUMAN MILK

| Age of Child | Ash | Protein | Milk Sugar* | Fat |
|---|---|---|---|---|
| 1 week | 1/3 | 1/4 | 1/9 | 1/6 |
| 1 month | 1/2 | 1/2 | 1/6 | 1/5 |
| 3 months | 3/4 | 2/3 | 1/5 | 1/4 |
| 6 months | O. K. | O. K. | 1/4 | 3/10 |
| 1 year | + | + | 1/3 | 1/2 |

*Cane sugar present in excessive amounts in nearly every individual case.

The above data are in no way offered as a condemnation of condensed milks. They simply serve to show what exceedingly dilute products are secured when the directions of the average manufacturer are followed. Condensed milks have a distinct use in the home and in the sick room and hospital. When properly prepared they are more digestible than fresh cow's milk, a strong point in their favor. While they cannot be regarded as absolutely sterile, as the heat to which they are subjected is not necessarily high enough to kill all disease germs, they are probably more sterile than most fresh milk, and if properly kept after opening are less liable to spoilage and decomposition. As an exclusive diet for young children they cannot be recommended, because of their deficiency in fat. An unsweetened condensed milk properly diluted with water, and with cream and milk sugar added, would offer a very satisfactory substitute for human milk. The sweetened condensed milks, in the writer's opinion, are entirely unsuited for infants' use, no matter how they are manipulated.

### SKIMMED MILK

Table 2 shows analyses of condensed skimmed milk both sweetened and unsweetened. If sold honestly for just what it is this product has a distinct value in the ordinary home, especially for culinary purposes. While the fat of milk is very essential in the feeding of young children or of invalids recovering from wasting diseases, the value of the milk proteins is too often overlooked or totally disregarded. These proteins are all present in skimmed milk, and it would seem that following the modern tendency towards the conservation of all natural food products, skimmed milk should assume its proper place among useful and desirable human foods and cease to be simply a food for swine.

In this connection it is interesting to note that modern physiologists maintain that the animal body deals not with intact proteins, or even with albumoses and peptones, but in all cases with the free amino acids which constitute the protein molecule. The great importance of the individual amino acid itself is therefore evident, since one amino acid may have a far different significance in its rôle in nutrition than others. For instance, Osborne and Mendel have shown that zein, a protein present in maize and destitute of the amino acid, tryptophane, is insufficient for maintenance in animals, but that if tryptophane is added to the zein diet complete maintenance is obtained. Casein, the chief protein of milk, unlike zein, contains all the amino acids except glycocoll, which it has been shown the animal can synthetize itself. It would seem, therefore, that in milk nature has supplied the proteins containing the amino acids most essential for growth, and that these milk proteins are of the greater importance in nutrition.

### CASEIN PREPARATIONS

In addition to condensed skimmed milk, casein appears on the market in a number of forms. Pure casein contains approximately 53.0 per cent carbon, 7.0 hydrogen, 15.7 nitrogen, 22.7 oxygen, 0.75 sulphur and 0.85 phosphorus. Commercial casein generally contains more or less milk sugar and mineral matter which have not been completely removed. A product sold by the Casein Mfg. Co. of New York, *No. 60 Casein*, has been found by the writer to contain 81.79 per cent casein, not greatly different in this respect from *Sanatogen*, a more highly refined product, but about forty times as expensive.

The following analyses of proprietary casein preparations are quoted from Scherer:

*Lactarine.* Water 9.92, fat 0.04, casein 78.16, carbohydrates 7.77 and ash 3.75 per cent.

*Galactogen.* Made from skimmed milk by the addition of a patent preparation; its chief constituents are albumin 70, fat 3.5 to 4.5 and phosphoric acid 1.5 to 2.5 per cent.

*Guttmann's Nutrient Milk Powder.* Made from skimmed milk mixed with prepared carbohydrates, mainly protein-free oat meal, and a small amount of aromatics; a partial analysis shows water 7.3, albumin 20, carbohydrates 65 and fat 4 per cent.

*Eulactol.* Prepared by evaporating milk, according to a patented process, *in vacuo*, at a temperature not exceeding 98° F. It contains albumin 33.25, fat 46.3, carbohydrates 14.3 and ash 4.3 per cent.

*Nutrium.* A mixture of casein, salt and milk sugar, containing 29.1 per cent proteins.

Hutchinson refers to the following additional preparations:

*Sanose.* Casein 80 per cent and albumose derived from white of egg 20 per cent.

*Nutrose.* A sodium casein compound; and

*Eucasin,* a similar compound containing an ammonium salt.

*Casumen.* An English product, almost identical in composition with *Plasmon* (see below).

*Lacto Somatose.* A preparation obtained from milk proteins with 5 per cent of tannic acid in combination.

The following additional preparations have been analyzed by the writer:

*Plasmon.* Prepared by treatment of the curd precipitated from skimmed milk with sodium bicarbonate. The compound is kneaded in an atmosphere of carbon dioxide and reduced to a powder, which is easily soluble in warm liquids. It contains water 12.4, fat 0.4, ash 7.7, casein 71.8 and carbohydrates 7.7 per cent.

*Sanatogen.* A mixture of casein with about 5 per cent of sodium glycerophosphate. It contains water 10.0, casein 80.0, ash 5.6, fat 0.1 and carbohydrates 4.2 per cent. It also contains a small amount of an unidentified protein (equivalent to 0.23 per cent nitrogen), and a small amount of inorganic phosphorus in addition to the phosphorus combined as glycerophosphate.

*Casoid Flour* (Callard, Stewart and Watt). Water 10.1, ash 2.5, protein 85.8, fat 1.1 and carbohydrates 0.5 per cent.

*Casein Flour* (Lyster Bros.). Water 5.7, ash 5.8, protein 84.5, fat 3.6 and carbohydrates 0.4 per cent.

*Trumilk.* A milk powder containing water 3.8, ash 6.0, protein 25.7, fat 27.4 and carbohydrates 37.1 per cent.

*Klim.* A skimmed milk powder containing water 2.6, ash 8.1, protein 37.1, fat 2.2 and carbohydrates 50.0 per cent.

*Milk Albumen.* Water, 4.7, ash 22.0, protein 56.5, fat 4.3 and carbohydrates 12.5 per cent.

*Dried Skimmed Milk.* Water 4.4, ash 8.1, protein 32.9, fat 1.4 and carbohydrates 53.2 per cent.

These casein preparations offer to the dietitian nearly tasteless products which are highly concentrated and easy of digestion. Quoting Hutchinson:

"It is as a means of enriching the diet in proteid, rather than as sources of energy, that these preparations are specially valuable. Roughly speaking, one may say that one part of them is equal as a source of proteids to four parts of meat. Their tastelessness and solubility enables them to be added to other foods, such as soups, milk puddings, cocoa and jellies, raising greatly their nutritive value, and without the patient being able to suspect that any such addition has been made. In many cases of illness, and especially, perhaps, in fevers and diabetes, they increase very considerably our dietetic resources, and are probably destined to take an important place in the treatment of disease by feeding. They are far superior to any meat preparations as condensed forms of proteid."

The item of cost, however, is worthy of careful consideration. Some of the above named preparations are very expensive. The writer has shown, however, that an increased price by no means necessarily indicates a superior nutritive value. He found, for instance, that *No. 60 Casein,* costing from 8.5 to 10 cents per pound, was almost equally efficient in promoting growth in young rats and in maintaining body weight in adult animals as *Sanatogen,* a much over-advertised preparation, costing one dollar per 100 grams.

## NEW ARMY POST HOSPITAL

### The U. S. Army Medical Department Is Foremost in the World—Its Hospitals the Best

Nothing about modern military establishments has progressed more in late years than the medical branch. All military leaders recognize that sick soldiers are a hindrance, and to make armies effective the men must be kept in good health.

No military establishment in the world is more progressive in its medical department than our own. What army surgeons and our hospital corps men can do has been amply exemplified at Panama, at Vera Cruz, at Manila, and Havana. We have the best surgeons procurable and funds are liberally supplied for maintaining splendid

U. S. Army hospital at Fort Worden, Washington. Notice sun porch covered with glass.

hospitals everywhere. Only the cleanest and best men, mentally and morally, are taken into the hospital corps, and this class of men is attracted to the corps because of the better advantages offered them in this service. In the hospitals the men live much as they do at home. They have wholesome messes and cozy quarters, and the rowdyism of barrack life is absent; moreover the pay is better.

The soldiers of Europe in few instances have as good medical attention as our own soldiers have, and when it comes to hospitals in which to treat the sick and wounded no country is in advance of Uncle Sam's service. The hospital of an American military post is always the costliest, cleanest, and most inviting building in the garrison.

The illustration shows the new army post hospital at Fort Worden, Washington. Note the glass-covered and screened porches.

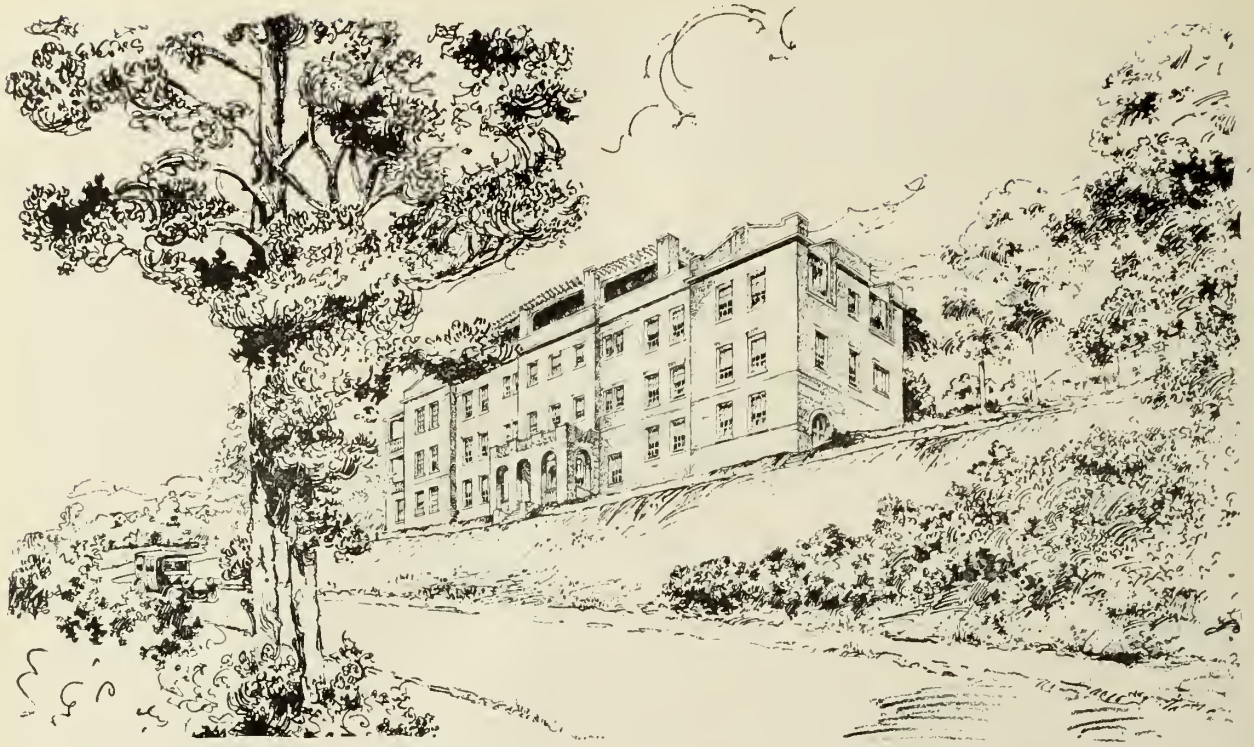

Fig. 1. Barre City Hospital, Barre, Vermont.

## ARCHITECTURE AND EQUIPMENT OF THE BARRE CITY HOSPITAL

### Small Institution in the Vermont Hills Has All "Frills" Cut Out to Allow Perfect Fireproof Construction for Safety of Patients—Equipment Simple but Complete

By EDWARD F. STEVENS, Architect, Boston

THE importance of building a hospital of fireproof material was never more appreciated than when the committee of a small country hospital, of less than twenty beds, was notified the other morning that a fire caused by spontaneous combustion had occurred in the middle of the night, resulting in the destruction of the window sash and frame of the boiler room, in which the fire started. There being no other combustible material, the fire was very easily extinguished, and no one but the superintendent and the fireman of the institution knew of its existence. Had the building committee been less wise, and the architect less insistent that sick patients should be housed in fireproof buildings *only*, there might have been one less New England hospital today.

The officials and the building committee of the Barre City Hospital, appreciating this point, although limited in funds, agreed with the architect that it was better to sacrifice some of the architectural ornamentation rather than risk the loss of human life by a non-fireproof building. To do this meant the cutting of many "corners" and the leaving off of some of the "frills," but in no case sacrificing the comfort of the patients.

Today there stands a complete city hospital, of thirty-two beds, of practically fireproof construction, which should resist for generations to come the ravages of time or the possibility of destruction by fire.

Located on one of the hills overlooking the city and taking advantage of the southeasterly slope for sunlight and air, the simple brick building with its broad brick porch bids welcome to the visitor or patient.

On the entrance level or ground floor the administration, the heating and the kitchen departments, as well as the Roentgen-ray and laboratory departments, are arranged; for, with the easterly side wholly above ground, light and air are not sacrificed.

This same Vermont hill allows the first floor to be entered on the westerly side where the ambulance door is located.

With all the general offices and utilities taken care of on the ground floor, the first and second floors are left free for the care of patients.

In planning this hospital no large wards were provided for, as it was felt that a better segregation could be obtained with smaller wards, so that on the first floor were located four three-bed wards and seven single wards; and a small maternity

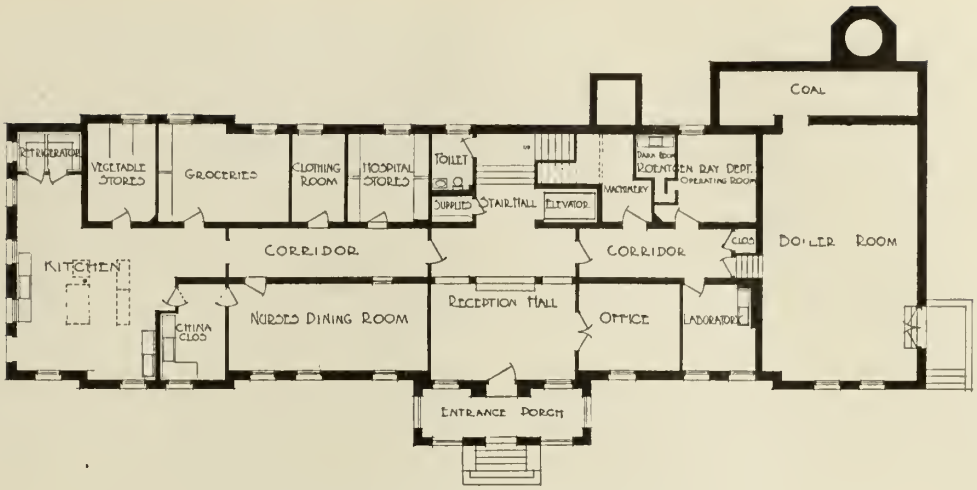


Fig. 2. Barre City Hospital. Ground floor plan.

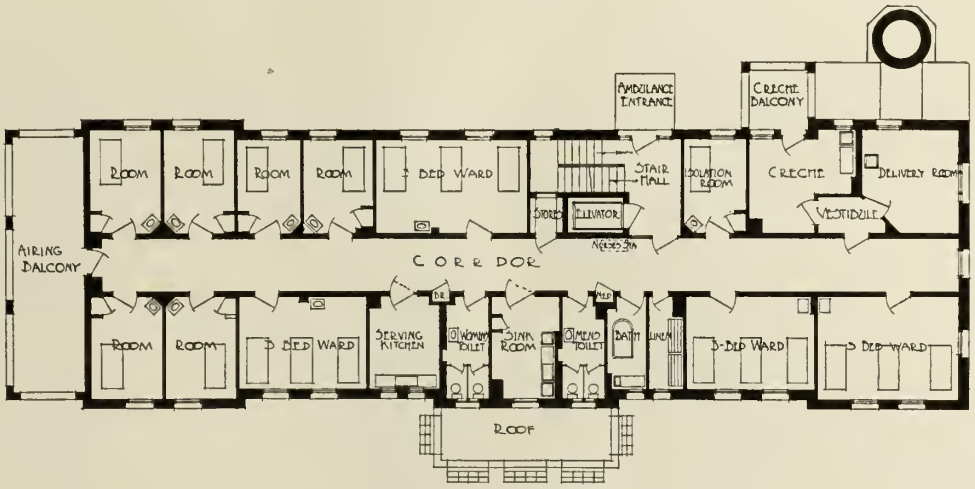


Fig. 3. Barre City Hospital. First floor plan.

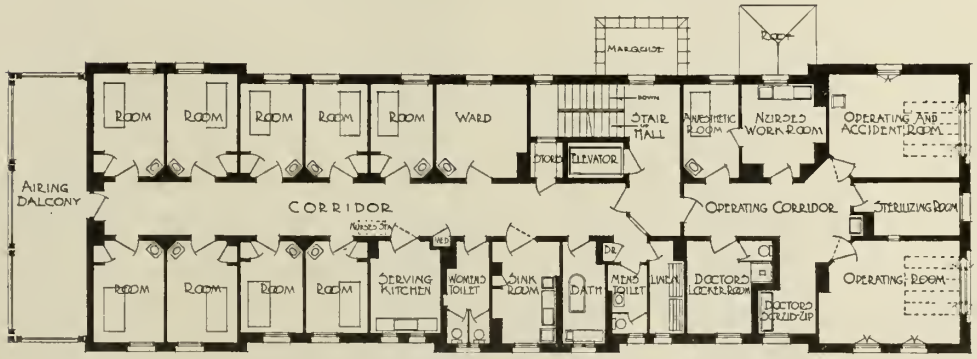


Fig. 4. Barre City Hospital. Second floor plan.

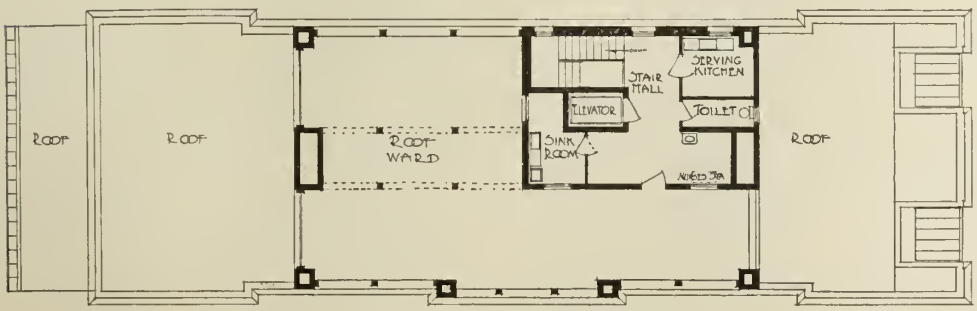


Fig. 5. Barre City Hospital. Third floor plan.

department, entirely isolated, with delivery room, creche and bathing department.

The second floor is almost wholly devoted to private patients, consisting of one four-bed children's ward and nine private wards. A complete operating department is also provided on this floor and is composed of two operating rooms, anesthetic room, nurses' work room, sterilizing room and surgeons' locker rooms, all being shut off from the patients' quarters and planned for the most efficient service.

On each floor ample serving kitchens, sink rooms, bath and toilet rooms, linen storage closets, medicine closets and nurses' stations are provided.

Large airing balconies at the south afford opportunities for patients to be wheeled into the open air, as all doors are wide enough for beds, and all beds are provided with trucks, while the elevator connects all floors.

Perhaps the most interesting feature of this thirty-two-bed hospital is the extensive roof ward, equipped with all the conveniences and accessories of indoor wards and commanding a wonderful view over the town and the adjoining hills.

The materials of construction are common brick, granite and terra-cotta, with floors of iron and concrete; the interior walls are of hollow tile, the floor finish of terrazzo, cement and linoleum; the finish is simple, the windows wide, and the coloring of the inside is cheerful and attractive.

The equipment is simple, but fulfilling every requirement of modern science.

EQUIPMENT OF BARRE CITY HOSPITAL

GROUND FLOOR.

Reception Hall:
- 2 benches.
- 4 chairs.
- 1 table.

Office:
- Safe.
- Desk.
- Table.
- 1 desk chair.
- 3 chairs.
- 1 costumer.
- Rugs.

Nurses' Dining Room:
- 18 round tables for four.
- 18 chairs.
- 1 serving table.
- Table linen.

China Closet or Serving Room:
- China.
- Glass.
- Silver.
- China cabinet.
- Refrigerator.

Kitchen:
- Range, gas.
- Broiler.
- Cook's table.
- Steam table.
- 2 chairs.
- Coffee urns.
- Dish warmer.
- Compartment steamer.
- Stock kettle.
- Cereal cooker.
- Hoods over range and kettles.
- Vegetable parer.
- Saucepan rack.

Clothing Room:
- 24 clothing bags with grille top and bottom.

Toilet:
- Paper holder.
- Towel holder for paper towels.
- Soap and glass holder.

Roentgen Ray Department:
- 1 examining table.
- 1 x-ray machine complete.
- 1 chair.
- 1 rug.

Boiler Room:
- Vacuum cleaning machine.
- Towel rack for paper towels.
- Stool.
- Small table.

Laboratory:
- 1 cabinet (special).
- 2 work tables (special) with black top.
- 2 stools.
- Bottle and tube rack.

FIRST FLOOR.

Wards A, B, C and D (4), each to have:
- 3 beds, with back rest, canopy, and irrigator hook, 4-inch wheels on head, extension legs.
- 3 hair mattresses in three parts.
- 6 pillows, feather.
- 3 bedside tables (iron).
- 3 invalid tables.
- 2 straight chairs.
- 2 rockers with arms.
- 2 foot stools.
- 3 hair pillows.

Rooms 1, 2, 3, 4, 5, 6 and 7 (7), each to have:
- 1 bed with back rest and irrigator hook, 4-inch wheels on head, extension legs.
- 1 3-part hair mattress.
- 2 feather pillows.
- 1 hair pillow.
- 1 dresser with glass.
- 1 bedside table, glass top.
- 1 invalid table.
- 1 rocker or Morris chair.
- 1 straight chair.
- 1 foot stool.
- 1 screen.
- 1 rug.
- 1 waste basket.

Creche:
- 8 bassinets with mattresses.
- 1 linen cabinet.
- Blanket warmer.
- 2 low chairs.
- 1 low table.
- Baby scales.

Delivery Room:
- 1 delivery bed, special.
- 2-part mattress for same.
- Instrument cabinet.
- Instrument table.
- Basin stand.
- Resuscitation bath.
- 2 surgeons' stools.
- 1 straight chair.
- 1 waste receptacle.
- 1 electric light stand.
- 1 instrument sterilizer.

Sink Room No. 1:
- Soiled linen holder and bags.
- Pan rack.
- Gas plate.
- Sterilizer.
- Incinerator.

Serving Kitchen No. 1:
- Steam table or gas stove.
- Refrigerator.
- Stool.
- Waste can.
- China cabinet.

Corridor:
- Nurses' desk.
- 2 chairs.
- Chart case.
- 1 wheel stretcher (Babcock).
- 1 costumer.
- 1 small table.

Airing Balcony:
- 2 tables.
- 1 couch.
- 6 rockers.

SECOND FLOOR.

Rooms 8, 9, 10, 11, 12, 14, 15, 16 and 17 (9), each to have:
- 1 bed with back rest and irrigator hook, 4-inch wheels on head, extension legs.
- 1 3-part hair mattress.
- 2 feather pillows.
- 1 hair pillow.
- 1 dresser with glass.
- 1 bedside table, glass top.
- 1 invalid table.
- 1 rocker or Morris chair.
- 1 straight chair.
- 1 foot stool.
- 1 screen.
- 1 rug.
- 1 waste basket.

Ward E, 2 Beds:
- 2 beds with back rest and irrigator stand, 4-inch wheels on head, extension legs.
- 2 3-part mattresses.
- 4 feather pillows.
- 2 hair pillows.
- 2 bedside tables, glass top.
- 2 invalid tables.
- 2 straight chairs.
- 1 rocker.
- 1 foot stool.
- 1 screen.
- 1 rug.
- 1 waste basket.

Serving Kitchen No. 2:
- Steam table or gas stove.
- Refrigerator.
- Stool.
- Waste can.
- China cabinet.

Sink Room No. 2:
- Soiled linen holder and bags.
- Gas plate.
- Sterilizer.
- Incinerator.
- Pan rack.

Bath Room:
- 1 chair.

Corridor:
- 1 nurses' desk.
- 2 chairs.
- Chart case.
- 1 small table.

OPERATING SUITE.

Anesthetic Room:
- 1 wheel stretcher.
- 1 surgeons' stool.
- 1 anesthetist stand.
- 1 metal chair.

Nurses' Work Room:
- 2 metal cabinets to measure.
- 1 metal table, 24x60 inches.
- 2 wood stools.

Operating and Accident Room:
- 1 operating table.
- 2 plain instrument tables.
- 1 wall solution stand.
- 1 irrigator stand.
- 3 surgeons' stools (1 high).
- 2 foot stools.
- 1 Mayo instrument tray.
- 2 waste receptacles.
- 1 electric light stand.
- 1 clock.
- 1 anesthetist stand.

Operating Room No. 1:
- 1 operating table.
- 2 plain instrument tables.
- 1 wall solution stand.
- 1 irrigator stand.
- 3 surgeons' stands (1 high).
- 2 foot stools.
- 1 Mayo instrument tray.
- 2 waste receptacles.
- 1 electric light stand.
- 1 clock.
- 1 anesthetist stand.

Sterilizing Room:
- 1 dressing sterilizer, 20x36.
- 1 utensil sterilizer, 20x24x20.
- 1 instrument and glove sterilizer, 10x12x24.
- 1 still and water sterilizer.
- 1 table.
- 1 metal case for dressings.

Corridor:
- Instrument case.

Doctor's Scrub-up:
- 2 soap dispensers.
- Shelf for supplies.

Doctors' Locker Room:
- 6 lockers.
- 1 table with drawers.
- 2 chairs.
- 1 costumer.
- 1 rug.

Airing Balcony:
- 2 tables.
- 1 couch.
- 6 rockers.

THIRD FLOOR.

Serving Kitchen:
- Gas stove.
- Refrigerator.
- China cabinet.

Sink Room:
- 1 soiled linen holder and bags.
- 1 gas plate.
- Pan rack.

Corridor:
- Nurses' desk.
- Chart holder.
- Linen cabinet.
- 2 chairs.

Roof Ward:
- 6 small tables.
- 6 rockers.
- 4 wicker couches.

IN GENERAL.
- Screens to all windows.
- Screens to airing balconies.
- Weather strips to all windows.
- Shades to all windows.
- Curtains to patients' rooms and offices.
- Lighting fixtures.
- China.
- Silver and glass.
- Linen.

## MEDICAL LIBRARIES FOR MODERN HOSPITALS

### It Is Necessary That Medical Staff Members, Interns, Nurses and Administrators Shall Have Available the Latest Current Literature—The Librarian Is Most Important—Methods of Operation

By GRACE WHITING MYERS, Librarian, Treadwell Library, Massachusetts General Hospital

IT is an interesting fact that the oldest medical library in this country is a hospital library. [1]It is at the Pennsylvania Hospital in Philadelphia and was established in 1763, primarily for the use of students, who were at that time required to pay each year "six pistoles as a gratuity for that privilege." This sum amounted to between 15 and 20 dollars. For 130 years this library was active in the life of the hospital, but since 1893 it has acquired few books, though it continues a subscriber to some 60 periodicals. Resting upon its laurels, it remains a valuable possession of the hospital, containing as it does one of the most interesting collections of old books on medicine and allied sciences in the United States. Its usefulness probably waned with the growth and activity of the large Library of the College of Physicians of Philadelphia.

Hospital medical libraries of any size are very few, either in this country or abroad. Judging from published statistics, it is safe to assume that there are not more than twenty in the world; eleven of these are in the United States and four in or near Boston. The largest and probably the best known is that at the Johns Hopkins Hospital, Baltimore. This contains 14,000 volumes and has an average daily attendance of 100 or more, serving the needs of the medical school as well as the hospital. The Treadwell Library of the Massachusetts General Hospital stands next in importance. It contains something over 9,000 volumes and serves the special needs of about 150 doctors. During the months when the medical schools are in session it is open to such students as are attending hospital clinics. In connection with the library are the clinical records, also under charge of the librarian, where much valuable matter is available for study. This serves to illustrate one of the strong arguments in favor of a hospital library, especially in the teaching hospitals. Institutions all over the country are appreciating more and more the value of their clinical records, and housed in close connection with a working medical library (even if the latter be small) they furnish the student with material not to be found elsewhere.

A medical library in a hospital is not a luxury, but a necessity. It is needed by the administration, by the visiting staff, by the resident staff, and by the nurses, as well as by students attending clinics. Each one of this army of professional people is working toward two great objects—the alleviation of suffering, and far beyond that, the prevention of disease. Medical science is making tremendous strides all along the line. Once the hospital had its hands full with the relief of pain either by doses of medicine, or by agonizing surgery (quite as agonizing to the surgeon as to the patient). The discovery of ether was the first great step forward, asepsis was the second, the x-ray was a third. And now medical science is searching deep into the mysteries of cause, that it may discover the means of prevention. The hospital laboratory teems with investigations and experiments. The staff has expanded, and with the aid of the social worker no longer dismisses a patient at the threshold of the hospital, but follows him home and to his work, with the result that conditions in both are daily improving. The hospital is a live element in the community.

And here is the opportunity of the hospital library. These men and women must study constantly, and along every line they need the assistance of books and of the librarian who keeps abreast of the times and can give "first aid" in all emergencies. The general libraries are doing a great work, but the special libraries are also doing a great work, and in an ever broadening field.

The administration staff of a hospital must keep itself informed upon all matters pertaining to construction and management, upon new apparatus of all sorts useful in its various departments, upon training school matters, upon the government of employees, upon the purchase of supplies, and upon innumerable matters of detail. The physicians and surgeons of the hospital staff need the literature of the day in all branches of medicine and surgery, and they need it while they are among patients. Students attending clinics at the large hospitals find many spare half-hours to spend in the library, where they may look up the bibliography upon special diseases which they are appointed to study. If it is even fairly equipped with good working material they may, at least, learn how to use it.

Nurses also, many of them today college graduates, ought to be accorded as much privilege as

[1]See Early Medical Libraries in America, by F. R. Packard, M. D. Medical Library and History Journal, V, 96.

possible in the use of so valuable an accessory to their work. With examinations to pass, and occasional theses to write, they greatly need books.

The hospital library should be in a central location, reached easily from all quarters, and it should be very much alive. It should not be allowed to be a mere collection. It can only in rare cases become a large library, usually for lack of room and funds. The medical libraries outside of institutions are the great storehouses of literature, while the hospital seeks to have a purely working library with its comparatively small collection of well-selected books, periodicals, government documents, reprints and such other matter as it is able to acquire, in order to serve quickly those who make use of it.

Periodical literature is most valuable, and this should be made easily available to readers through the librarian's familiarity with it, and with the great indexes of medical literature, viz., the Index Catalogue of the Surgeon General's Library, the Index Medicus, the Index of Current Medical Literature published every six months by the American Medical Association, and the International Abstract of Surgery.

In order to meet such demands as these, the library must have its material well classified, with a good catalogue, easy access to shelves, good filing of unbound and uncatalogued matter, and bulletins.

The proper classification to use is always a difficult question to settle. For a medical library, that of the College of Physicians of Philadelphia is undoubtedly the best. This was published complete in Vol. 1, of the Bulletin of the Association of Medical Librarians, in 1902. The classification of the Library of Congress is also excellent. The Dewey system, which in its expansiveness is well adapted for a general library, is at present very deficient on the subject of medicine and surgery. Used in connection with the amplification of its numbers contained in the Bibliographica Medica (a French Index Medicus published from 1900-1902), it is much more available; but even with this help it does not meet the demands of a science which is making such rapid strides. Some libraries have made classifications of their own which have proved most satisfactory. But with the tendency of the day towards standardization, it seems a pity that medical libraries cannot adopt a universal system.

As a means of making the library a real mainspring in hospital life, the following practical points, well tested by long use, are offered:

A staff of hospital workers is like one big family, and none but the librarian realizes how they all center around the library as the bureau of information upon all medical topics, and—many *un*-medical ones. Attention should be paid to the collecting of all matter relating in any way to the history of the individual institution. Lists of all publications by members of the staff should be kept, and reprints of periodical articles by them obtained and catalogued. Reviews of their books should be noted, and references kept. Topics of current interest should be brought to notice by means of bulletins posted in a conspicuous place, and kept from week to week with references culled from the best periodicals, English, French, and German. These are of value to all branches of the hospital staff, effort being made by the librarian to keep in touch with any personal specialties. If space is available files of hospital annual reports should be collected, particularly those of local hospitals, and the larger institutions of the country. The McLean Hospital at Waverley, Mass., owns a valuable collection of reports of institutions for the insane, some dating back to 1790.

The care of all this matter is a topic in itself and can be only briefly touched upon here. Some libraries bind reprints, grouping them together either by author or by subject. Others file them singly in pamphlet boxes, or in vertical files. The latter is probably the most satisfactory, considered from a general standpoint. Pasteboard boxes, absolutely dust-proof, made to stand on end, with cover opening out—the hinge of the cover reinforced by a strip of linen pasted inside—make a cheap and very satisfactory filing case. Ordered in quantity from any box factory, they cost but a few cents apiece. If space allows, and reprints can be obtained in duplicate, the filing of one under author and the other under subject is a very satisfactory method, especially where time for cataloguing is limited, as it obviates the necessity for this, both groups being filed alphabetically and boxes plainly labeled.

There are various methods of filing hospital reports, which may also be kept in the pasteboard boxes above mentioned. Some libraries arrange them by states, some by cities and others alphabetically according to the name of the hospital. An arrangement first by state, second by cities in the state, and third alphabetically by name of hospital in the city has proved a good method in the Treadwell Library.

A dictionary catalogue containing both author and subject cards is the best for general use, and the Index Catalogue of the Surgeon General's Library is universally accepted as the finest example of medical subject classification. If the late Dr. John S. Billings had done nothing else, this index would be a monument to his memory. A saving

of time may be accomplished by buying Library of Congress cards. These may be obtained for medical books and for many of the government documents dealing with medical subjects. "The Indexers," of Chicago, also furnish cards cataloguing original articles in several of the important periodicals. The government bulletins and reprints issued by the Public Health Service, the Hygienic Laboratory, the Bureau of Animal Industry, and a number of those by the Department of Agriculture are very valuable and often in demand. They may be preserved after the manner of reprints and arranged according to numbers.

Collections of portraits of men of the profession will be found interesting, also reproductions of famous old pictures dealing with medical subjects, such as have been issued from time to time, by the Münchener Medizinische Wochenschrift and the Deutsche Medizinische Wochenschrift, and at long intervals by other journals. An occasional exhibit of such material attracts attention and stimulates the life of the library. The Boston Medical Library has made a point of cataloguing portraits (including paintings and photographs) wherever they appear, not only in its own library but elsewhere.

Readers should be allowed easy access to all material, but should not be allowed to return books to the shelves, for this often occasions serious temporary loss through misplacement. There must be rules, but let them be few and very much to the point.

Hospital superintendents, under stress of multifarious duties, are too prone to undervalue the medical library within the walls of their buildings. It is hoped that these few suggestions may awaken interest in the subject and help to hasten the day when the medical library shall be regarded as of quite as much importance to the hospital as the laboratory, or any other accessory department.

## DISEASE AMONG GARMENT WORKERS

### Report of the Government Public Health Service Shows Only Two Per Cent of Workers Free From Disease or Defects

An instructive report of an investigation of the health of garment workers has just been made by the U. S. Public Health Service, which should be read by health workers in all parts of the country and in all branches of the service.

For the purposes of the investigation 3,000 garment workers volunteered for a physical examination; 2,000 males and 1,000 females. Only about two per cent of the total number examined were found free from defect or disease, there being recorded 13,367 defects of all kinds, of which 9,451 were in males, 3,916 in females, or an average of 4.36 defects and diseases to each individual examined. While not all of these were serious defects, many of the conditions noted exercised a deleterious effect upon the individual. An interesting feature of the report is that there were discovered no vocational diseases peculiar to the garment trades, but this sedentary industry was shown to intensify the bad effects upon health and efficiency of certain defects and diseases.

Among males the rate of prevalence of tuberculosis was found to be ten times that in the United States army, and three times the army rate among females. The disease was most prevalent among the lowest paid class of workers.

Apart from tuberculosis, the most common defects and diseases noted among the garment workers were defective vision, 69 per cent; faulty posture, 50 per cent of males; chronic nose and throat affections, 26.2 per cent; defective teeth, 26 per cent; pyorrhea alveolaris, 20 per cent; weak and flat feet, 26 per cent; chronic constipation, 23.7 per cent; hypertrophied tonsils, 15.3 per cent; defective hearing, 10 per cent, and nervous affections, 7.75 per cent. Only 11½ per cent of those with subnormal eyesight wore glasses, and but 2.35 per cent of these had glasses which fully corrected the defect.

The report shows that faulty postures were very common among the garment workers. It is interesting to learn that the previous military training received by many of the foreign-born garment workers exercised a marked effect in preventing the development of poor postural habits.

The conclusion reached by the investigators is "that a large part of the defects and diseases of garment workers arise from ignorance or neglect of personal hygiene. A proper regard of these principles on the part of the workers would go far in nullifying the bad effects of the sedentary indoor occupation upon the health." In this connection the recommendation is made that the education of the workers in personal hygiene, especially the correction of visual defects, the formation of correct postural habits and attention to oral hygiene, will do much to correct this condition. It may be added that much effective work along these lines has already been done by the Joint Board of Sanitary Control, whose activities were described in a previous number of the *Bulletin*. The report points out the necessity for better instruction of school children in personal hygiene and the necessity for their postural training is insisted upon.

### The Power of Publicity

One of the speakers at the recent Rochester convention of the National Public Health Association paid the following remarkable tribute to "printers' ink," as a factor in the prevention and cure of disease:

"Printers' ink should be included in the pharmacopeia. Wisely used, it prevents tuberculosis and builds hospitals to cure it. Thousands of babies are saved every year by its educational force. It is the only universal agency for the treatment of diseases in the community at large. You may cure the individual in the sickroom; you must treat the community through the newspapers. As soon as you begin to use print for any public or educational purpose, your opponents will dub you an 'agitator.' But it's a good thing to be. Every advertiser is an agitator, whether he agitates the public mind in favor of pickles or public health. Don't let the term bother you. It's really a compliment. Use printers' ink in large quantities, and don't be afraid to pay for it."

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Contributors, subscribers, and readers will find important information on advertising page 34.

## Kansas City's New Health Regime

A year or more ago THE MODERN HOSPITAL had occasion to criticise somewhat severely what it conceived to be political interference with the administration of the Kansas City General Hospital and with that city's care of its dependent sick.

It seems now that Kansas City and its officials were big enough to take in a kindly spirit the attitude and strictures of THE MODERN HOSPITAL, and it now gives us very great pleasure to record a year of phenomenal progress in Kansas City, and the culmination of plans that promise to place that city in the very forefront in all those things that interpret themselves into terms of health progress.

Several months ago Mayor Henry L. Jost appointed a Hospital and Health Board made up of Mr. Thomas M. Finn, chairman, and Messrs. Baylis Steele and John F. Wiedemann. These men were told that they had nothing to do with politics and that they were to reorganize the public health activities of the city. They sent for Dr. Paul Paquin, one of the best trained public health men in the country, and asked him to come to Kansas City as director and executive officer. Only one condition was exacted by Dr. Paquin, namely, that he was to employ whomsoever he pleased and let out any present members of the service who were not doing their duty. The board cheerfully agreed and Dr. Paquin was installed. Then the board brought in another non-resident trained man in the person of Dr. W. H. Phipps as Food and Dairy Inspector, and still another, Dr. J. A. Borron, as Superintendent of Sanitation.

The city gave the board $365,000 a year in the budget, and Mayor Jost added another $50,000 out of an emergency fund under his control.

The installation of the new director was celebrated as "clean-up" week, and more than $100,000 worth of work was done, all paid for by the people whose premises were cleaned up. A few thousand dollars came out of the board's funds where individuals could not be expected to pay, such as alley cleaning and premises in one very poor quarter.

Since then visiting nurses have been set to work, a sanitary corps, and many new, trained heads of departments in the hospitals.

Now a school examination system has been created, and doctors and nurses are going over all school children before they are admitted; where disease or defects are found the children are sent home and are immediately followed there by physicians and nurses. Specialists of all sorts are employed, oculists, dentists, nose and throat specialists, skin specialists, orthopedists, etc., and, in short, Kansas City is taking a leading place in health progress.

The people of Kansas City are giving Mayor Jost a large measure of credit for all this splendid work, and the active leader is President Finn and the inspiration is his director, Dr. Paul Paquin.

## The Cost of a New Hospital

It is proposed to build a municipal hospital for Jacksonville, Florida. There are privately owned and semi-public hospitals there now, and the city has been paying one of the latter at the rate of $2.04^1/_3$ per day for each of its indigent patients, the average number of these patients per day last year being 36, with a total cost to the city of $26,852.37. We have nothing to say about these figures, excepting that if the hospital has been giving Jacksonville's dependent sick competent care, the amount paid was probably not greater than the actual cost.

But some of those who are working for a new hospital have made some figures to show what a 100-bed new hospital would cost, for construction, and for subsequent operation, and these figures must be so misleading to the people of Jacksonville that THE MODERN HOSPITAL feels that it is in duty bound to challenge them, not only in the interest of the people of Jacksonville, but for the good of higher hospital service everywhere.

Dr. M. B. Herlong, one of the physicians of the city, seems to have made the figures, and they are published in detail in the Jacksonville *Daily Times-Union*. Here are Dr. Herlong's estimates:

Capacity of proposed hospital, 100 bed patients and 100 outdoor clinic patients:

| | |
|---|---|
| Cost of proposed city hospital, four stories and basement, fireproof | $50,000.00 |
| Equipment and furnishings complete | 10,500.00 |
| Maintenance for one year, full capacity | 24,000.00 |
| Cost per patient (bed) per day in proposed hospital | .67 |

The cost of 67 cents per bed patient per day covers all cost on 100 outdoor clinic patients per day, and this is making no allowance for the tremendous quantities of farm products that can be produced on the city prison farm of 640 acres, which would probably reduce the figure to 50 cents per patient per day.

MONTHLY EXPENSES

According to Dr. Herlong the following figures show what the monthly expenses of the proposed city hospital would be:

| | |
|---|---|
| One superintendent | $ 75.00 |
| One superintendent of nurses | 50.00 |
| One night supervisor | 50.00 |
| Four orderlies | 80.00 |
| One chief cook | 25.00 |
| One druggist | 50.00 |
| One janitor assistant | 20.00 |
| Groceries for attaches | 250.00 |
| Laundry | 45.00 |
| Gasoline | 50.00 |
| Total | $ 695.00 |
| One assistant cook | $ 20.00 |
| Three interns | 15.00 |
| One elevator man | 20.00 |
| Twelve nurses | 60.00 |
| One ambulance driver | 40.00 |
| One janitor | 50.00 |
| Groceries for 100 patients | 810.00 |
| Drugs and supplies | 200.00 |
| Fuel | 75.00 |
| Gas for plates | 15.00 |
| Total | $1,305.00 |

Grand total cost per month to operate hospital, full capacity, $2,000. With this hospital the city could then treat 100 bed patients every day in the year and 100 outdoor clinic patients also for a total cost of $24,000.

Of course these figures are ridiculous. Such a building, fireproof in construction (and Jacksonville would surely not think of anything else), and without one dollar spent on ornamentation, could not be built for less than $150,000, and even this amount would contemplate only the cheapest kind of plumbing, fixtures, floors, doors and windows, on which repairs would have to commence within two years. Jacksonville would be better off financially in five years if it spent $200,000 on such a hospital.

A 100-bed hospital cannot be equipped for less than $200 per patient, or a total of $20,000.

The raw food alone for 100 patients, including the necessary help, will cost certainly $0.50 per patient per day; the other expenses, including administration, medical and surgical supplies, and even the most meager scientific work, such as pathology, the x-ray and the operating rooms, cannot possibly cost less than $0.75, and Jacksonville cannot afford to operate as poor an equipment as this amount will pay for.

Dr. Herlong proposes to run the laundry for this hospital for $45.00 per month. As a matter of fact, the lowest possible amount of laundry allowable in a hospital is at the rate of 15 pieces per day per patient, or a total of 1,500 pieces; let us take off 50 per cent, assuming a more economical administration than has ever been accomplished in any hospital yet, and put the total amount of laundry at 1,000 pieces. The Pullman car company, under the most rigid business system ever practiced, has been able to launder its simple supply made up of sheets, pillow slips and towels, for $0.56 per hundred; and it is possible, but hardly probable, that there may be a 100-bed hospital in this country that does its work as cheaply; but let us say $0.50 per hundred, to give Dr. Herlong's proposed administration again the benefit of an assumption of superexcellence; that would be $5.00 per day or $150.00 per month, instead of $45.00, or a total of $1,800 per year.

It is useless to discuss labor figures, because these are variable with every locality.

Dr. Herlong proposes to have certain private rooms for pay patients. There is no question but that pay patients help to lower deficits, but it is very highly problematical whether pay patients would patronize a hospital whose administration was predicated on an annual expenditure of $24,000 for a 100-bed hospital.

We certainly hope that Jacksonville will get its 100-bed municipal hospital, because every city should care for its dependent sick in its own institution; but we also hope that Jacksonville will not try to reach *down* to the ideals of those who are now asking for such an institution.

### Hospitals and the Public Health

All over this country, especially in the cities and towns, public health movements are beginning to spring up. Municipal health officers are sometimes taking the initiative, elsewhere state officials are the moving spirits, and again that most active and energetic national force, the Public Health Service of the government.

Meetings and get-togethers of all sorts are being held; conferences, either general or concerning some special problem, are going on. Every nook and corner of the country seems to be inoculated with a spirit of health progress.

What are the hospital administrators and trustees doing about these movements? Are they active and taking part and lending their influence to make them profitable and educational? Or are they sitting within their own walls feeling

that their problem is one within the hospital and nowhere else?

As a matter of fact there are very few well trained public health officers in the country; a good many of them have come into office as the result of political action on the part of the public, or of some new party which has seen the great need of a more active concern for the public health than their former officers had developed. Some of these new health agencies are volunteers, come into the field imbued with the spirit of the time, but possessing no other qualifications for leadership.

But however inspired, or by whom initiated, these movements will be fruitful or the reverse in proportion as there is wise, trained guidance and advice at hand. Mere enthusiasm is not sufficient to qualify one for leadership; there must be method and precision of movement based on some fundamental principles that have been the heritage of those trained in the work—that have been learned in the hard school of personal experience and in the actual doing of the things needed to be done.

Probably no one in any community in this country knows as much about the approaches to the problems of the public health as the superintendents of the hospitals, and those few trustees who have not only loaned the use of their names but have given long years of actual service to their institutions.

Public health problems out in the community do not differ from hospital problems, excepting in their details. If a problem at issue concerns prevention of disease, who knows more about that than the hospital workers? If it is the examination of school children and the correction of handicaps to progress in their school work by reason of poor eyesight, bad teeth, discharging ears, or nose or throat imperfections, who is better able to advise about the details of such work than the experienced hospital worker?

If it is a question of garbage disposal, smoke elimination, pure water, housing conditions of the poor, who knows more about those things than the man or woman who is receiving into his or her institution almost hourly members of the community who are victims of bad conditions in these respects, and who has to nurse them back to health again?

In other words, it is the purpose in this writing to urge the hospital people to take an active and aggressive interest in every problem and every movement in their several communities that have to do with the health and physical, mental and moral welfare of the people.

Indeed it seems to us that the very well springs of these community health movements should be in the hospital, and that initiative should start there. Instead of that, there are many communities where the official health agents are compelled to spend a great measure of their time and energy keeping the hospitals themselves up to anything like tolerable efficiency.

## Fire! Fire!! Fire!!!

We have not had anything to say for several months now about fire protection for patients in hospitals.

Winter is now coming on and the opportunities for fire to break out are to be greatly increased. What are you doing about this in your hospital? You can at least clean out old rubbish from the closets and storage places, see that your chemical extinguishers are recharged and in working order, have your engineer or electrician trace out all exposed wiring to see that its insulation is good, get the flower boxes and other obstacles off your outside fire stairs, and if you have put up temporary gates on the fire balconies to allow the patients out there during the summer, you can get these down. You can see that your standpipe valves are workable; you can see that your hose is not rotted and about to fall to pieces. You can test out your alarm system in the hospital buildings, see whether the key to the fire call in the street is in its place at the telephone station.

In other words, you can take the proper precautions to provide for the greater fire hazard that comes with cold weather.

### Switzerland to Care for 2,500 Tuberculous British, French and German Prisoners

England, France and Germany have recently entered into an agreement with Switzerland in accordance with which tuberculous English prisoners will be sent to various places in Oberland, the French to Leysin and the Germans to St. Moritz. The prisoners will receive care at sanatoriums under Swiss guard at the expense of the countries holding them captives.

### Graduate Nurses' Association of Ontario Adopts Eligibility Clause

At a recent meeting of the association the following eligibility clause for membership was incorporated in their by-laws: "Nurses graduating from a training school in connection with a hospital with a daily average of twenty-five occupied beds, and giving its pupils not less than a two-years' training in general nursing, or giving an equivalent training in one or more hospitals, and whose curriculum has been approved by the board of directors of the association, shall be eligible for membership."

A new hospital for the Union Printers' Home at Colorado Springs, Colo., is planned by the board of trustees.

## ROUTINE TECHNIC FOR HANDLING SPECIMENS

### A Number of Well Administered Hospitals Tell How They Gather, Protect and Analyze Urine and Operating Room Tissues—What Is Done With the Records

A SYMPOSIUM

Some weeks ago a reader of THE MODERN HOSPITAL sent in the following query, with the request that it be answered in the "Queries and Answers" column:

"To the Editor of THE MODERN HOSPITAL:

"What is the best method of collecting and sending urines from the wards to the laboratory for examination?"

It was believed that this particular piece of technic is one of the most important that hospitals have to deal with, not only to administrative officers, but to the medical staff members; and that from the standpoint of the patient's welfare it is quite as serious as the surgical technic in the operating rooms, to which so much attention is paid. It was thought, therefore, that those interested would be better served if the hospitals themselves were permitted to answer the question, rather than that it should come from a single person.

For this reason, letters were sent to a number of the hospitals, and their replies, which follow, should be a very excellent guide to all hospitals.

### COLUMBIA HOSPITAL FOR WOMEN, WASHINGTON, D. C.

DR. J. O. SKINNER, Supt.

*On the gynecologic side.* A specimen of voided urine is collected as soon as possible after the patient has been admitted. This is sent to the laboratory for routine examination, with a form printed expressly for this purpose, on which the pathologist makes his memorandum and immediately transfers the result to the form, as a part of the patient's chart. Then amount for twenty-four hours is started and noted on the chart. On the morning of the operation a catheterized specimen of urine, collected in a sterile vessel, is sent to the laboratory and the result reported on the chart before the administration of an anesthetic. In case of an emergency a catheterized specimen is immediately collected and examined before anesthetic. The first specimen of urine, after operation—voided or catheterized—is collected, measured and examined, and then specimens for three consecutive mornings immediately following operations. As many specimens are examined as the visiting physician requires.

*On the maternity side.* A specimen of voided urine is collected as soon as the patient has been admitted and a routine examination is required. Then amount for twenty-four hours is collected and a portion of it is sent to the laboratory for examination—routine and urea. Thereafter twenty-four-hour amount is collected and examined for routine and urea every ten days before the patient is delivered. In cases where patients are admitted in labor and are delivered before a specimen is able to be collected, the first specimen after delivery is collected, measured and sent for routine examination.

*For the whole hospital.* The specimens of urine collected are placed by the nurse at a designated spot for this purpose, and the orderly carries them to the laboratory. The senior nurse on each ward is held responsible for their proper disposal.

### CITY HOSPITAL, ST. LOUIS, MO.

F. E. CHAPMAN, Supt.

There is, in the operating room, a representative of the resident pathologist at all times. Specimen to be examined is immediately placed in a four percent solution of formalin, and taken direct to the pathological building.

In the operating suite there is also a tank of carbon dioxide, with a freezing microtome, microscope and other necessary equipment to do pathological work. If immediate examination is indicated, such examinations are made in the operating room suite.

All wards are equipped with ward laboratories, with at least one laboratory for not more than two wards. As a routine, specimens of urine are taken from every patient admitted to the institution. Orderlies are detailed from various wards to collect these specimens and take them to the laboratory assigned to the ward in which they originate. These examinations are then made by the intern in charge of the patient, under the supervision of the senior physician in charge of the service, a routine report is signed by the man making the examination and incorporated in the history of the patient. These ward laboratories are also equipped for making blood counts, stomach analyses, in fact, all routine laboratory work. Every procedure is noted on a blank provided for the purpose, and that blank incorporated in the history of the patient. If for any reason a confirmation of this examination is desired, specimen is submitted to the resident bacteriologist or pathologist for same.

Specimens of tissue, special blood examinations, examinations of fecal contents, etc., are taken to the bacteriologist by the intern in charge of the patient. Routine report is made in all instances and incorporated as a part of the history.

### WESLEY MEMORIAL HOSPITAL, CHICAGO, ILL.

E. S. GILMORE, Supt.

Our manner of handling urine and tissue specimens is this: We have urine bottles holding one liter for single specimens. These bottles are sterilized and placed in the wards by orderlies. Immediately after arrival of the patient a single specimen of urine is sent to the laboratory. At the end of twenty-four hours a twenty-four-hour specimen is sent. This is routine in all cases except in minor operations and nose and throat operations. Thereafter urine specimens are sent to the laboratory only by order of the attending physician. All specimens, except the first, must be in the laboratory by seven a. m. For the twenty-four-hour specimen from thirty to forty grains of boric acid are added for preservation purposes. Each specimen is accompanied by a printed slip giving the following information:

Attending physician's name
Intern
Patient
Room No.
Time obtained

with a space for request for special examination, should any be desired. The nurse records on the history sheet of the patient each urination, time and quantity. The laboratory findings are filed each afternoon with the chart sheets of the patient and thus become a part of the history.

It is the duty of the senior intern to take tissue specimens to the laboratory. He must fill out and leave with the specimen a card, giving the following data

Patient's name
Room No.
Case No.
Laboratory No.
Attending physician's name
Clinical diagnosis

Anatomical location of the specimen
And a short history for the benefit of the pathologist, giving occupation, sex, number of children, chief symptoms and previous operations.

A pathologist's report is made in duplicate, the original fastened to the patient's history sheet and the duplicate is retained in the laboratory.

### JOHNS HOPKINS HOSPITAL, BALTIMORE, MD.

KARL H. VAN NORMAN, Asst. Supt.

The collection of all urine specimens is under the strict supervision of the head nurse in each ward. In the female wards the collections are made by the nurses and in the male wards by the orderlies. For single specimens we have had made a special urine bottle, somewhat similar in shape to a milk bottle, the capacity being ten ounces. There is a space on the outside of this bottle where the glass is ground to a sufficient extent to write on it the name of the patient and the ward. The duty of the nurse or orderly obtaining the specimen is merely to collect it and hand it at once to the nurse in charge, who sees that it is placed in the proper specimen bottle and labeled. Twenty-four-hour specimens are collected in large containers, sufficient in capacity to hold the total specimen. These containers are labeled just prior to beginning the collection of the specimen, the label having the name of the patient and the ward, and the day and hour at which the collection of the specimen is begun. These containers are left in the ward lavatories and, beside each one, pasted on the wall, is a paper slip on which the orderly or nurse (depending on male or female ward) notes the time and amount of each specimen voided. Each specimen voided, after being noted on this slip, is emptied into the large container. If specimens require immediate examination, they are sent to the laboratories at once; all other specimens are sent in the mornings and all specimens are sent to the different laboratories by the orderlies. Routine urine examinations are made by the house officers in the central clinical laboratory, and each house officer is responsible for these routine examinations on all the patients of which he has charge. Special urine examinations are made in the medical, bacteriological or chemical laboratories, under the direction of the physicians in charge of those laboratories. The directors of these laboratories are more highly trained laboratory workers than the house officers. The report of each routine urine examination is recorded on the history by the house officer in charge of the case. Written reports of special examinations are sent to the wards by the directors of the medical, bacteriological or chemical laboratories, and each such report is entered in the patient's history by the house officer in charge of the case. All reports of urine examinations are entered in the histories as permanent records.

### TOURO INFIRMARY, NEW ORLEANS, LA.

A. B. TIPPING, Supt.

Tissue specimens from the operating department are sent to the pathological laboratory twice daily, at 11:30 a. m. and 4:30 p. m., as a regular routine. Special specimens, also any obtained after 4:30 p. m., are sent to the laboratory immediately after the operation.

Each specimen must be accompanied by a regular form, properly filled in. It is the duty of the intern who assists in the operation to fill in the form before he leaves the operating department, and hand it to the head surgical nurse, who is responsible for the safe delivery of all specimens, with reports to the laboratory.

A specimen having been examined, the pathologist completes the form, which is then taken to the ward by the laboratory orderly and attached to the bedside notes of the patient with paste, a tube of which the orderly carries with him. The practice of pasting these reports on the bedside notes was introduced to prevent them from becoming mislaid or lost, or being placed under the current bedside notes, in which case they might escape the attention of the attendant on his next rounds. There were also occasional disputes as to whether the reports had been rendered or not by the laboratory. Subsequent to the adoption of this practice there has been no trouble in this respect.

If a patient leaves the hospital before the laboratory findings have been made, the orderly discovers this fact when he goes to the ward with the report, and he then delivers the report to the office, where it is placed in an envelope addressed to the attending surgeon, after it has been impressed with a rubber stamp reading as follows: "Please return this report to the Touro office, to be filed with patient's history." A record of all reports handed to the surgeons is retained in the office to insure their return.

Specimens of urine, sputum, feces, etc., from the wards are sent to the laboratory at least twice daily, oftener when necessary. The head nurse of the ward is responsible for the safe delivery of all specimens to the department. The ward orderly takes them to the laboratory under her instructions.

The form is filled in by the intern for all specimens, unless they are contained in a bottle, in which case another form, a cardboard tag, is filled in and tied to the bottle. Paper forms were found to be rather unsatisfactory, as they were liable to be mixed up in transit from the ward to the laboratory or in the pathological laboratory and difficult to fix to the container, therefore the tag was substituted. The tags remain on the bottles until the contents have been examined. The examination completed, the pathologist fills in the form and they are then sent to the wards by the laboratory orderly and handled in a similar manner to the tissue reports, as detailed above.

Full records of all surgical and bacteriological findings are kept in card index files in the laboratory on special forms. For the benefit of those hospitals which have not found a satisfactory container, it may be stated that the regular mason jars, ordinarily used for preserving jam, are very satisfactory for this purpose, as they are air-tight, durable and can be easily sterilized.

### GRACE HOSPITAL, DETROIT, MICH.

DR. W. L. BABCOCK, Supt.

*Operating Room Specimens.* The collection, labeling and dispatching of tissue specimens from surgical cases should be the responsibility of the operating room supervisor or one of her paid assistants. The following routine has been found satisfactory:

The utility nurse during the operation receives the specimen and immediately envelops it in sterile gauze before leaving operating room. Directly after the operation she delivers the specimen to the operating room supervisor or the assistant delegated with the responsibility of preservation and labeling of pathological specimens. The specimen is wrapped in a fold of sterile gauze saturated with a four percent solution of formalin. A printed shipping tag is then securely tied to the wrapped specimen and the tag properly filled out with the name of patient, clinical diagnosis, date, name of operator and character of examination desired. The specimen is then placed in a covered specimen tray. The permanent pathological blank is then headed with the data on tag and signed by the resident

or attending physician. This blank is left in the specimen tray until time for delivery of the specimens to the laboratory. On receipt in the laboratory this blank becomes the definite order for an examination, and on completion of the examination the findings are entered thereon and the blank becomes a part of the permanent record of the patient.

The operating room supervisor or her assistant enters, in red ink, in space provided for that purpose on the operating record book, the name of specimen and pathological examination required. At the end of the day this book records the day's operations and a check list of all specimens saved for examination. The head operating room orderly is delegated with the responsibility of delivering specimens to the laboratory. Specimens saved and collected in specimen tray from morning operations are taken to the laboratory by this orderly at 1:00 p. m. and from afternoon operations at 4:00 p. m. The pathological tags accompanying the tray equal in number the specimens within. To insure further against controversy on loss of specimens it would be desirable for the pathologist or one of his assistants to receipt for the specimens.

*Specimens for Immediate Examination.* Specimen is immediately immersed in a hot ten percent solution of formalin. A laboratory assistant is in waiting and specimen is taken directly to the laboratory or to the specimen room, frozen, stained, sectioned and studied microscopically. Verbal report is then made to the operator usually within ten or fifteen minutes after removal of specimen. After making this report the laboratory assistant fills out the permanent laboratory blank with the necessary data, including the findings. All laboratory blanks with the findings thereon are delivered to the desk of the resident physician at 5:30 p. m. They are at once checked up and charged to the patient if charges are customary, and then distributed to bedside chart of patient, where they remain until the patient leaves the hospital.

*Museum Specimen.* Large specimens for preservation are placed in covered glass jars of suitable size by the utility nurse and delivered to operating room supervisor. The pathological tag is filled out, recorded on operating room book and specimen taken to laboratory by the orderly at once.

*Urine Specimen.* Uniform bottles of flint glass should be provided for this purpose. It is preferable that such bottles be of a different size, color or shape from bottles used in the hospital for other purposes. The twelve-ounce, or so-called pint, grape-juice bottles, will be found excellent urine specimen bottles. Orders can be given that all these bottles be saved, returned to pharmacy, washed and delivered to laboratory, where they should be stored in one place. It should be the duty of the laboratory orderly to distribute to the toilet or utility rooms of all wards and corridors a given number of clean, empty, corked, urine bottles at a specified time each day. All utility rooms should be provided with a urine bottle rack capable of holding from eight to sixteen bottles, depending on bed capacity of ward or corridor. Specimens of urine saved during the day time should be immediately delivered to the laboratory by the ward orderly or probationer. Specimens of urine from newly admitted patients should be saved by the night nurse, collected in wire bottle basket by the night orderly designated for that purpose and delivered in laboratories before 6:00 a. m. Urine specimens of newly-admitted patients should be examined by laboratory assistant, a urinary clinical record made out, and record delivered to the patient's chart on corridor before 8:00 a. m., so that the findings may be available for the early morning operations.

Duplicate records of all pathological findings are filed in the laboratory by a card index system.

## BUFFALO GENERAL HOSPITAL, BUFFALO, N. Y.

DR. R. R. ROSS, Supt.

After admission of a patient the first urine passed is sent to the laboratory for examination. Then, commencing at 6:00 a. m., the morning following admission, a twenty-four-hour sample is started. The total amount is sent to the laboratory the following morning for a complete analysis. Two sizes of urine bottles are used—one to hold single specimens and the other a twenty-four-hour quantity; these are corked by placing over the mouth of the bottle two or three layers of toilet paper held in place by a small rubber band. These are thrown away when the bottles are washed and sterilized. The urine examinations become a part of the patient's history and are filed with it.

## BELLEVUE HOSPITAL, NEW YORK CITY

DR. GEORGE O'HANLON, Supt.

There are small laboratories connected with the various services of the hospital, in which all routine examinations of urine, blood and sputum are made by interns, and the findings are made a part of the case records.

All tissue specimens are sent from the operating room to the pathological laboratory, and the responsibility for safe and prompt transportation of these specimens rests with the house surgeon. The pathologist reports his findings on special blanks provided for the purpose, which are made a part of the patient's bedside history.

There are a certain number of eighteen months' appointments to the intern staff of the hospital, the first six months of this service being in the pathological laboratory. This gives the pathologist an opportunity to train these men, and to them is assigned a large part of the work of the smaller ward laboratories, when they take up their duties on the medical and surgical wards.

## LOUISVILLE CITY HOSPITAL

DR. J. W. FOWLER, Supt.

*Surgical Specimens.* Wrap in gauze moistened with saline and send with "Surgical Specimen" blank to main laboratory as soon as possible after removal. Deposit in ice chest behind entrance door. Pathologist responsible for report.

*Bacteriological Specimens.* Send specimens with "Bacteriological Specimen" blank to main laboratory and deposit in basket on ice chest. Pathologist responsible for report.

*Blood Cultures.* Send written request on "Blood Culture Request" blank to main laboratory and file on hook on ice chest. Pathologist will get blood and report. Cultures kept five days before being reported negative.

*Wassermanns:* Blood must be obtained by intern on ward, must be delivered to main laboratory with properly filled "Wassermann" blank by 6:00 p. m. on Mondays and deposited in ice chest.

*Autopsies.* Charts must be complete, sent to main office immediately after death and delivered by main office with autopsy permission to main laboratory. Signal flashed fifteen minutes before autopsy begins.

*Throat Cultures.* Send swabs to main laboratory with "Bacteriological Specimen" blank properly filled with "K. L?" written under "Remarks." Deposit in bacteriology basket on ice chest. Pathologist responsible for report.

*Blood Counts:* Done by intern on service or student assigned to case.

*Urinalysis.* Admission urinalysis done by intern on

service in small laboratories. Subsequent urinalyses done by students in main laboratory. Specimens for students must be put on proper shelf at entrance to main laboratory by 7:00 a. m.

*Widals, Sputa, Gastric Contents and Feces.* Specimens obtained by intern on service. Specimens must be put on intern's shelf at entrance to main laboratory before 1:00 p. m., accompanied by directions on plain sheet of paper as to examination desired. Specimens sent down after 1:00 p. m. will not be done until the next day. Intern on clinical microscopy service responsible for reports.

*Transudates, Exudates, Cell Counts and Globulins on Spinal Fluids.* Done by intern on service in small laboratories. Spinal fluids for Wassermann or bacteriological examination must be separate sterile specimens and sent to main laboratory. For Wassermann see Wassermann directions. For bacteriology see "Bacteriological Specimens." Bacteriological examination made only of separate sterile specimens. Examinations made of specimens which are not delivered in separate sterile tubes are worthless.

*Tubercle Bacilli and Gonococci.* Stained smears done by intern on clinical microscopy in main laboratory. Deposit with directions on plain white paper on intern's shelf at entrance to main laboratory.

*Urine Cultures.* See directions for "Bacteriological Specimens." Examinations made only of catheterized specimens drawn into sterile tubes. Use "Surgical," "Bacteriological," "Wassermann" and "Blood Culture Request" blanks only on specimens intended for chief pathologist. With specimens for intern on clinical microscopy or for students use only plain slips of white paper and write name, date, ward and examination desired.

Sterile swabs for bacteriology and sterile tubes to be used for bacteriological specimens and for Wassermanns only are kept in care of head nurses on wards, head operating nurse and registrar in out-patient department. "Surgical," "Bacteriological," "Wassermann" and "Blood Culture Request" blanks kept in same places. Supervising nurses responsible for supplies on wards which may be obtained in main laboratory.

## THE PRESBYTERIAN HOSPITAL, CHICAGO

ASA BACON, Supt.

In our hospital the operating room specimens are placed in sterilized utensils and are collected at eleven and four o'clock each day, and taken to the laboratory. A report of all specimens of importance is written up and attached to the history sheet. These reports are made up by the pathologist and become a part of the patient's record.

## LOS ANGELES COUNTY HOSPITAL

DR. C. H. WHITMAN, Supt.

*Urine Specimens.* These are collected in steamed urinals from male patients, and similarly in clean bed pans from the female patients. A specimen is sent to the laboratory in a six to eight-ounce bottle, labeled with the date, name, ward and bed of the patient. It is the duty of the head nurse to see that for every new patient a specimen of urine is sent to the laboratory the first evening of the patient's admission.

A complete examination of this specimen is made by the junior intern of the division, and the findings entered upon a blank provided for that purpose. This copy becomes part of the permanent record of the patient. The urine specimen is taken to the laboratory by the ward orderly and the record blank is returned to the head nurse by the laboratory porter.

*Specimens From Operating Rooms.* All specimens are taken from the operating rooms to the laboratory by the anesthetist at the completion of the morning work, together with a filled out blank provided for this purpose. The tissue is studied by the resident pathologist and record of his findings recorded upon the same blank. The completed blank is now delivered by the laboratory porter to the head nurse of the ward, and then becomes part of the permanent record of the patient.

Every ward of the hospital is equipped with steam and water hoppers for cleaning and sterilizing bed pans, urinals, etc. These hoppers are supplied with superheated steam.

## UNIVERSITY OF MINNESOTA HOSPITAL

DR. L. B. BALDWIN, Supt.

The collection of all specimens of urine and their delivery to the laboratory is undertaken by the nurses. Specimens are delivered in urine glasses instead of bottles. Each specimen is accompanied by a request for examination made on a regular request blank. Reports are copied on case record blanks by an intern, after he secures them by calling at the laboratory for them. Each examination is recorded as a part of the patient's record and a copy of the report is retained in the laboratory.

Tissue specimens are wrapped in a thick layer of moist gauze, a slip, bearing the name of the patient from which it was obtained, attached, and the specimen delivered to the laboratory icebox by a nurse. A surgical intern fills out a request blank as soon as possible after the specimen is secured and delivered to the laboratory.

In the case of specimens requiring immediate microscopic examination during operation, they are taken direct to the laboratory, sectioned, examined and reported upon at once direct to the surgeon. The results of all examinations become a part of the case records.

## MASSACHUSETTS GENERAL HOSPITAL

DR. JOSEPH B. HOWLAND, Asst. Administrator

*Pathological Specimens.* The senior nurse in charge of the operating room of each service is responsible for all pathological specimens in the operating room being sent to the surgical pathological laboratory. The method is as follows: Small specimens are placed in a bottle of ten percent formalin or normal salt solution, corked and tagged with the name of the patient, service and date. Larger specimens are wrapped in gauze wet in ten percent formalin or normal salt solution and covered with rubber tissue. Accompanying specimens to the laboratory and completely filled in is Form 1 enclosed.

It has been found that house officers are apt to be called away during operations or immediately after by visiting surgeons, and for this reason many specimens in the past have been lost.

*Urines.* There is a list of patients in the wards kept hanging beside the hopper, into which all excreta are thrown. This list designates which urine and stools are to be saved and is to be consulted before they are thrown away. The list is arranged like this:

| | | |
|---|---|---|
| Kelly | Save | oz. 8+10+ 6+ |
| Cohen | Save | oz. 15+12+ 7+ |
| Paul | | oz. 6+10+15+ |
| Johnson | | oz. 3+ 4+ 3+6+ |
| Wood | Save | Single Specimen oz. 12+15+ |
| French | | oz. 10+18+14+ |

Those marked "save" are not to be thrown away. Others are to be measured and recorded and may be poured out. The urines saved are poured in a five-pint bottle into which one or two drachms of toluene have been placed as

a preservative, the larger amount being used for diabetic urines. In the medical wards these twenty-four-hour amounts are not measured as are the others, but are poured directly into the five-pint bottle and measured later by the night nurse at 7:00 a. m., when the twenty-four hours ends.

Ambulatory patients, whose urine is not wanted, are permitted to measure their own, record it and throw it away, unless their intelligence is not equal to this.

When the twenty-four-hour amount is to be saved the five-pint bottle is labeled, covered with a towel pinned around it and placed under the patient's bed. He is instructed that all urine must be poured into the bottle and there is an enameled funnel with each bottle to facilitate this.

The good points of having the bottles under the bed are that with bed patients there is no possible occasion for the orderly to pour the patient's urine away or mix it with any other, for the easiest thing is the right thing and with ambulatory patients the labels are sometimes not enough to keep urines from being mixed. An illiterate or careless person may easily do this, but if he knows his bottle is under the bed he cannot unwittingly make a blunder.

Single specimens are collected from each new admission by the night nurse just before 7:00 a. m. Urine glasses for these are labeled with Form 8. These glasses have a capacity of 150 c. c.

The night nurse has, as part of her duties, the preparation and labeling of the five-pint bottles to be used the next day, so that they may be ready by 7:00 a. m. when the previous ones are removed. They are carried in wire baskets, each with six compartments, so that six bottles go in one basket. The single specimen glasses go in a wire basket also, but there is room for twelve of these.

The orderlies carry these with the aid of a truck to the laboratory, generally having the specimens there by 7:15 a. m. The house officers examine them and by 10:00 a. m. should be through. The results are posted at once on the laboratory sheet, Form 6, which makes a part of the patient's record.

The bottles and glasses, after the intern has finished his work, are placed in the laboratory sink and are immediately cleaned by a laboratory helper. About 4:00 p. m. orderlies collect bottles and return them to the wards, where they are thoroughly washed with soap and water and left standing full of water until they are needed again. In the female wards, when the twenty-four-hour urine is being saved, the procedure is the same as in the male when the patient is in bed. When up and about she takes her bottle with her to the water closet, passes urine into a bed pan and then pours it into her bottle. This she then carries back to the ward and places it under her bed. We have found this arrangement of keeping bottles under the beds very important, as when there are many labeled bottles in the lavatory there are sure to be mistakes, and such errors may ruin a piece of research which has been going on for some time.

Special urines for the chemical laboratory, or for any other research, are labeled with the red label, Form 9, on which is written the name of the doctor for whom they are saved.

Urines collected from 7:00 a. m. September 10th to 7:00 a. m. September 11th, for example, are considered as being the urine of September 10th, and are so labeled and recorded on the clinical record.

*Stools.* Stools to be saved are noted on the sheet beside the hopper also, and patients notified if their stools are wanted. These are passed into bed pans and then transferred to china cups about five inches in diameter and four inches deep, each provided with a tin cover. They are kept in a zinc-lined ventilated cabinet in the lavatory until 7:00 a. m., when they go to the laboratory. The cups go through the same routine as the urine bottles, except that they are not kept full of water.

## UNIVERSITY OF CALIFORNIA HOSPITAL, SAN FRANCISCO

Dr. H. T. Summersgill, Supt.

*Single specimens of urine* are collected in a clean receptacle and sent to the laboratory in a clean, covered bottle, marked with the name of the patient, number of ward, bed and service.

*If sterile specimens* are ordered, these are obtained under aseptic precautions, carefully sealed and sent to the laboratory connected with the service to which the patient belongs.

*Twenty-four-hour specimens* consist of a 250 c. c. specimen of all the urine voided in twenty-four hours. This is prepared as is the single specimen and is marked likewise, excepting that it contains the whole amount voided in twenty-four hours, and also the words, "twenty-four-hour specimen."

The night orderlies are responsible for seeing that all specimens reach their respective laboratories before seven each morning.

Each chart contains a sheet for the report of analysis of urine. These reports are written on a chart by the intern in charge of the case, and this sheet becomes a part of the permanent record. It is the intern's duty to add the urinary and other analyses to the patient's permanent history record.

It is the duty of all laboratory orderlies to clean promptly all specimen jars and glasses and return them to their proper wards. All specimens of urine, sputum, pus and feces are thrown out if permitted to remain in the laboratory twenty-four hours, even if unexamined. We are obliged only at times to carry this procedure into effect in the students' dispensary laboratory.

*Specimens of tissue* are wrapped in gauze wet with normal salt solution, marked with name of patient, ward, diagnosis and nature of examination desired and taken to the pathological laboratory by the operating room orderly. If rapid frozen sections are desired, it is taken as soon as removed, otherwise specimens are not removed until the finish of the operation.

The report of the pathological findings is written by the pathologist and is copied on to the pathological chart sheet by the intern in charge of the case, and becomes a part of the permanent record.

All pathological reports are carried from the laboratory by a diener to the hospital office, and there promptly delivered to the various residents in charge of the cases.

## MT. SINAI HOSPITAL, NEW YORK

Dr. S. S. Goldwater, Supt.

*Urines.* 1. Single specimens are collected in test tubes by the night orderly. Each tube has been previously labeled with the date, patient's name, ward and bed number, and points to which special attention should be paid by the examiner. Labels are made out by the night nurse.

2. Twenty-four-hour specimens are started at 6:00 a. m. and completed at 6:00 a. m. the next day. After shaking the entire specimen a small amount is taken and treated as a single specimen.

3. All the specimens are kept in the lavatory, together with a list of specimens which have been ordered. The

physician who is to make the examination, after comparing the list with the specimens collected, signs the list and in this way acknowledges the receipt of all the specimens ordered.

4. The day orderly takes the specimens to the laboratory.

5. After examining the specimens the doctor charts the results in a special sheet for urinalysis. All results are charted before 11:00 a. m. The results become a permanent part of the patient's history.

6. Specimens are ordered:

(a) Specimens of urine from every patient are examined on admission and once a week thereafter.

(b) In some cases regularly every day, twice a week, etc.

*Tissue Specimens.* All specimens are taken care of immediately after their removal by a designated member of the house staff, according to the rules embodied in a special form, which is posted in the staff room on the operating floor. The pertinent data are recorded by him on another form and the slip is signed by him.

The material, with Form 2 attached, is brought to the laboratory (a) from the wards immediately by porter; (b) from the operating rooms. All specimens are kept intact by the nurse in charge of the operating room and are called for at 5:00 p. m. by a laboratory porter.

On arrival at the laboratory the tissues are looked after as soon as possible. The data on Form 2 are transferred by the pathological intern to the general record book of the laboratory, where a number is given it known as the accession number. When slides of the tissue are kept a second number is also given, known as the report number.

A third form is filled out and kept on file in the laboratory. Form 3 contains a complete record of the gross and microscopic appearances of the tissue, what parts were studied microscopically, the diagnosis, and whether any portions were kept in stock or in the museum.

The pathological diagnosis having been made, this is noted on Forms 2 and 3 and in the general laboratory record book, and signed with the name of the pathologist making the diagnosis. Form 3 is then filed permanently in the laboratory. Form 2 is sent to the house surgeon or house physician of the appropriate service.

The house officer sees to it that the report is transferred to a fourth form which is attached to the chart of the patient, and becomes a permanent part of the patient's record. The attention of the attending physician or surgeon is brought to the laboratory report noted on Form 4, when official visits are made.

### SAN FRANCISCO HOSPITAL

Dr. R. G. Brodrick, Supt.

Specimens are collected in bottles provided for that purpose. Before pouring urine into bottle the latter is thoroughly rinsed with hot water, even though it appears clean. Four or five ounces is amount usually required.

A clean piece of paper is tied over the top of the bottle and a label is attached to the side, showing the name of patient, ward and bed number, the hour at which specimen was obtained and laboratory to which it is to be sent for examination. Bottles are placed in boxes and carried by nurse to laboratory.

All urine examinations are made by interns, who bring reports to ward, where they become part of patient's record.

Specimens of tissues are placed in small basins provided for that purpose. They are brought to laboratory by intern, who makes report to ward, where it becomes part of patient's record.

### LAKESIDE HOSPITAL, CLEVELAND

Dr. A. R. Warner, Supt.

The specimens of urine are collected at night unless otherwise ordered. The nurses in charge of the wards instruct the orderly on the male wards what patients' specimens are to be obtained, and as he obtains them he reports to her and is given a label made out by the nurse in charge, which gives the name of the patient, the ward, the date, the kind of specimen (catheterized, etc.), precautions (typhoid, etc.), to which laboratory (gynecological, medical or surgical), and the ward doctor that has charge of the patient. This label is pasted on by means of stickers to the specimen bottle and is ready for the laboratory.

On the female wards the nurses obtain the specimens and see that the labels are placed on the bottles as the specimens are obtained.

The specimens are taken to the various laboratories before 7:00 a. m. by the night orderlies, *i. e.*, before they go off duty.

The ward doctor is responsible for the examination and charting of results of examination from all specimens from his ward, and must have these charted before his visiting man makes rounds.

The urine chart is an integral part of the case record.

### Civil War Nurses Elect Officers

At the meeting of army nurses of the Civil War, recently held in Washington, D. C., officers were elected as follows: President, Mrs. Alice Carey Risley, Jefferson City, Mo.; counselor, Mrs. Rebecca Lane Price, Lancaster, Pa.; secretary and press correspondent, Mrs. Mary O. Stevens, Peabody, Mass.; senior vice-president, Mrs. Mary E. Squire, Sheboygan, Wis.; junior vice-president, Mrs. Susanna Kripps, Philadelphia; treasurer, Mrs. Salome Myers Stewart, Gettysburg, Pa.; chaplain, Mrs. Emily Alder, Clarion, Iowa; conductor, Mrs. Matilda Morrison, Cleveland; color bearer, Mrs. Nannie Cochran; guard, Mrs. Margaret Hamilton, Wakefield, Mass.; judge advocate, Gen. George B. Loud, New York City.

Mrs. Risley was born in New Orleans, La., and as a girl cooperated with her mother in helping all who sympathized with the Union. During the war, when conditions made it impossible longer to stay in the heart of the south, they made their way by night to a steamboat landing, and took a Mississippi boat for St. Louis. There was plenty of work to do, for every vessel from the south brought sick and wounded men, and soon the younger woman became in reality a hospital nurse.

Mrs. Stewart is the widow of a veteran, who, after he had met the young teacher who nursed soldiers in her home in Gettysburg, married her and became pastor of the United Presbyterian Church in that city, which he served until his death. Mrs. Stewart has served many years as treasurer of the National Association of Army Nurses.

Mrs. Stevens, as Mary O. Thompson, served in 1864 in Seminary Hospital in Virginia.

As Miss Pennypacker, Mrs. Price served in hospitals in Philadelphia, and was one of the first sent to Gettysburg, going by way of Baltimore, and, with one other, riding in a box car with the supplies she was carrying. Her mother and sister also were nurses, and it is said that besides these there were 147 members of the Pennypacker family in the service.

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Construction work on a new home for the King's Daughters' Hospital, Gulfport, Miss., will be started this fall.

# HOSPITAL, MEDICAL *and* SPECIAL MEETINGS

## Principles of Hospital Construction[1]

BY MEYER J. STURM,
Architect, Chicago.

The poetic license which is so often assumed by the dreamer would in all probability not come amiss to some extent at this time were I to present to you, rather than a paper on "Principles of Hospital Construction," a paper on "Modern Hospital Ideals," inasmuch as we have come to look upon hospital construction as a thing apart from the ideals which give rise to its planning.

Purely from a material rather than an idealistic standpoint, the construction of a hospital would suggest that portion of the hospital which we actually see before us, rather than the hospital which we should visualize first and then, in a practical way, construct. I made the statement some years ago that few of us can distinguish between ideals which are practical ideas, and ideas which are impractical ideals.

In presenting to you, therefore, these few thoughts on the principles of hospital construction, I am taking them almost wholly from the point of view of the planning of an institution that will fulfil all of our ideals practically, or at least so far as human limitations make it practicable.

The modern hospital expert is something more than the architect who draws the comparatively few lines, makes the calculations and shows the size of your building, your rooms, and its accessories on his drawings. He is, as his name implies, an expert in and for hospitals, and as such it is as necessary for him to know the essential and minor details as it is for him to know the general ideas with which he obtains results in their entirety. Unfortunately, physicians as a whole have had rather impracticable ideas, not so much from a lack of interest as from a lack of opportunity for studying the hospital from its administrative and maintenance point of view. The busy physician or surgeon had or took no time to acquaint himself with what he considered these minor details which are so essential for the general administrative requirements of such institutions. If, therefore, we view the hospital as a "living thing" which must have all the suppleness and gracefulness required in any well working institution, we must endeavor to seek certain ideals and to standardize these to the fullest extent to obtain practical results.

The hospital must be a means to an end rather than the end, and must in no instance be considered as a climax. Rather it should be considered as an evolution, in which is visualized its most comprehensive usefulness for the future as well as the present to those who require its ideals of ministration.

We of the present day are not the arbiters of the extent and size to which our hospitals may attain. This is where the maximum of practical idealism must be fully comprehended. There can be no fixed ideas as to how large a hospital may be, and in a modern hospital it is necessary to design a hospital that will be flexible and readily enlarged. Our towns grow fast, and as they grow the population of these towns is becoming better educated to the hospital idea, that it is no longer a necessary evil, but a blessed necessity. In the handling of this problem, our ideals should go beyond what this generation requires and prepare for the future institution.

There are too many indiscriminate calls made upon men to endow institutions more or less worthy, but which have their inception only in the fact that what is in existence for the time being is not adequate for their needs, simply because there has been no thought of the immediate or far future. The consequence of all this is that there are many so-called mushroom hospitals which are put up without any idea of the ideals stated.

One 100-bed hospital manifestly could be administered, especially so if it were well planned, at much less cost than four hospitals of 25 beds each, and this could be applied to any size hospital in the same ratio. When I call your attention to the fact that a saving of one cent per patient per day in a 100-bed hospital is the interest at 5 per cent on $7,300 per year, you can readily figure how much it would be if a saving of ten cents per patient could be made per day, not only on the lessening of cost of maintenance, inasmuch as the overhead charge of a 100-bed hospital is practically no more than it is on a hospital of many times this size, but because what is required in the way of equipment of a permanent character in a 100-bed hospital, while it might be the minimum of such equipment, might still be sufficient for a hospital two or three times this size. This saving is real and vital, for in the first instance if such a saving is not made where it is possible to make it, then you have a perpetual mortgage to an amount equal to the interest charge of $7,300 for each penny, and in the other case you have practically a 100 percent gold bond from which you are clipping the coupons for all time. The saving to the patient today in the well equipped hospital, over and above the more poorly equipped hospital, is the difference between the actual cost and sometimes the entire cost of your institution, figured on the interest basis, and that is the only thing we have to figure on because any endowment that you have, in buildings or anything else, must be figured purely and simply on the income they bring, whether it is on a monetary basis or an endowment basis.

You will hear the paper on hospital equipment, which I am sure will be of interest, and I am in hopes that the reader of this paper will bring out the fact that the standardization of such equipment is one of the features of the present-day hospital which requires your earnest attention to attain the maximum of efficiency. In the short time allotted I can only give you the briefest outline of the possibility of making the hospital just what it should be to fulfil the requirements.

The first of these is the greatest amount of serviceability at the lowest cost consistent with a first-class structure, and a minimum of fixed maintenance charge for the maximum of work to be done. It must be patent to you that the first requirement, therefore, would be to have your problem worked out in a consistent and highly efficient manner. This would mean that if you were putting up a new hospital entirely, sufficient space should be provided for this purpose, and it should be in such a location that all of the ideals for which you are striving could be readily carried out, if not by you, then by the future generations. This would presuppose a comprehensive block plan showing the requirements of your institution.

[1]Paper read before the First Annual Convention of the Catholic Hospital Association, Milwaukee, June 24-26, 1915.

The second step would be to build such portion, or portions, of the institution as would fit your purse and then to proceed to have your plans drawn in preliminary form for the purpose of discussion for such a portion of the institution. Let me state that in the making of such a drawing, while such a first unit—as I am pleased to designate it—would be a complete hospital within itself, it would still, despite this or from the very nature of the plan, be a nucleus for the institution in its entirety with all of the necessary adjuncts, the entire institution.

To enlarge somewhat on this, such a first unit should embody your complete kitchen department, your complete laundry, and your power plant, and by the latter I mean the heating apparatus and such adjuncts as would be required for your institution. These departments, as well as the other departments in the hospital, should be so planned that they would serve the maximum number of patients to be housed in your hospital in its entirety or should be made so their future enlargement could be as readily made and at as little expense as would be entailed if you were erecting as a first unit the ultimate departments necessary. Necessarily, the addition of stairways for future units, or the addition of toilets for such units, are matters that can be very readily taken care of.

As an instance, your first unit should contain an operating department that would be practically none too large for this unit, but should be large enough or planned in such manner that it can be made large enough readily, without the necessity of moving such a department or building it in a future wing, to adequately serve the ultimate institution. I call attention to these particular points because it is the fact that the construction of these departments, such as the kitchen, power plant, laundry, and operating departments, and, for that matter, administrative department, is without doubt the most expensive in the construction of your hospital.

Manifestly, therefore, such a first unit containing as it does these departments, would be more expensive per se than a unit of the same size which contained only rooms and wards and toilets, which would be built in the future. It is therefore necessary that your hospital be planned along the lines which will make the cost of these departments a minimum and will give you the maximum of efficiency for your expenditure.

The mode of procedure seems to have been heretofore to buy a piece of property and erect a hospital, so called, on the grounds in approximately the position where it is impossible either to enlarge the hospital itself or to put up additional buildings to advantage, and it is true also that in no particular line of endeavor has this been considered an economical condition except in hospitals. Why should we not apply the same economic conditions to our hospitals that we do to any other class of buildings? We must be practical in order to attain our ideals, and we must recognize the fact that after all, even if our hospitals are entirely charitable institutions, the economic factor is one of the principal factors to be taken into consideration.

I have been so fortunate of late as to be connected with several large projects in which this economic object has been paramount, and in every instance it has been deemed advisable in putting additions to existing hospitals that such additions be taken as a nucleus for an entirely new institution. Only recently in the Charity Hospital at Cleveland, Ohio (Bishop Farrelly), this question was brought forward, and at present, despite the fact that tradition and sentiment would preclude the possibility of tearing down the oldest hospital in Cleveland, still it was impressed upon the authorities of that institution that if they erected at the present time a unit of the size which they required, as an economic factor it would be not only to their credit as good administrators, but from a pecuniary standpoint the proper procedure to plan an entirely new institution.

As for the actual construction of the modern hospital, taking it for granted that location and orientation of buildings are correct, the next step would be to design entirely for fireproof construction. We will take it for granted, therefore, that we have our plans in good working order for erecting our building, and then we are confronted by the equipment. I do not mean by this, furnishings, but the permanent equipment of the hospital, and it is here that I am making my most earnest plea for the standardization of such equipment. I say, without fear of contradiction, that it is at this point where the dividing line really lies between the failure of the hospital to carry out the maximum amount of work with the greatest efficiency at the least cost, and that institution which is apparently well planned wherein no such efficiency can be attained.

By equipment is meant not only the actual fixtures, but all of the mechanical and sanitary equipment which naturally form an integral part of the hospital. Under this heading would come the entire electric, plumbing, and heating work, not only as a whole, but in the thousand and one minor details which go to make up that perfection which is so necessary in these particular branches. These imply more than the mere installation of pipes and wire.

It is necessary that the entire details for your sterilizing equipment, your cooking apparatus, your steam tables, all of your plumbing fixtures, your entire heating and power and electric apparatus, etc., should be shown in detail not only in your drawings, but that each and every item to its minutest detail should be cared for in your specifications. This not only will give you efficiency in your institution, but in having such details and specifications minutely set forth, it gives you the advantage of open competition and the consequent minimum first cost in the construction of the building, but what I wish to lay stress upon most urgently is the fact that with such details and specifications which are thoroughly standardized, there need be no special preparation, either when the building is under construction or when it is necessary to give such equipment the attention which it must have in years to come. These minor essentials are just as important, if not more so, than the seemingly large problems, for without, as an instance of this, a signal system in your hospital which will be positive and quiet, and will make it possible for your nurses to get the maximum efficiency with the least amount of travel, you have lost even in the best planned hospital some of the requirements of your ideal hospital.

I do not confine myself to the signal system, for I could include a good house telephone, a convenient and good laundry chute, the convenient placing of your different departments, the apparently small but very essential matter of the control of your lighting system, and matters of this character into which I cannot go in detail in such a paper. The lighting problem itself in a hospital is one that is usually left to the lighting fixture man to suggest what he thinks is correct, whereas it should be worked out in every detail, even to the number of foot-candles required in every department, before the electrician starts on his work of pulling the wires, and as a plea for the men who are devoting their time to the working out of these problems for you, let me state that your general practitioner in architecture cannot, because it takes years to acquire the details for this class of buildings alone, have the intimate knowledge

which is necessary to work out these problems, any more than the general practitioner in medicine, although he might be efficient, could do an especially difficult surgical operation which required specialized skill.

In presenting this subject to you for the attainment of the ideal in hospital buildings, it will be necessary to say a few words relative to the general plan. Necessarily the basement would contain such working departments as you require; namely, your kitchen, power plant and laundry, unless you intend putting such departments in a separate building, which would be ideal. It would also contain, besides the accessory rooms, your special diet kitchen, nurses' dining rooms, and store rooms. When I say basement I don't mean a basement that is two-thirds or three-fourths under ground; I mean the basement as we are now constructing it in hospitals, that is, pretty well out of the ground. The first floor would contain your administrative departments and such wards as you require. The remainder of the building would be allotted to either smaller wards or private rooms, the latter separate or *en suite*, arranged in such manner as local requirements and conditions call for. The top floor, or such portion of it as would be required for the department, and which would obtain the north light, would necessarily be assigned to the operating department.

In planning and detailing all of these departments, the ideas of standardization and the standardization of ideals should be strictly adhered to. Let your diet kitchens and service rooms be of such size that they will adequately fulfil the requirements of such departments most readily. This would also hold in general for your linen rooms and toilet rooms.

The small ward has eventually come into its own for manifest reasons in preference to the large ward, and many of the costly and difficult problems of construction have been solved thereby. The allotment of these can be readily worked out by the authorities of the hospital with the aid of the architect.

In a practice limited to this class of buildings extending over fifteen years, during which time I have been the architect or consultant for over 100 such buildings, I have found that due to these minor local conditions, no two hospitals have ever been planned and erected exactly alike so far as arrangement in the particular distribution of rooms and wards is concerned, but in all of these hospitals I have uniformly worked toward the standardization of all departments which should be standardized. There can be no standard size of rooms and wards, but there can be standards established for the location and equipment of what I am pleased to term; the working departments.

I wish to call your attention to an article on page 410 of the June issue of THE MODERN HOSPITAL on the fallacy of the per-bed rating in calculating the cost of hospitals, especially that portion of it which calls attention to the manipulation of figures which reduce the cost per bed.

There is but one way to ascertain the cost of construction and equipment of your hospital; that is to have fixed ideas as near as practicable as to the number of ward and room patients which the building is to house, to work out in preliminary form the departments required to administer to a hospital of the size which you wish to erect, to ascertain the cost of labor and material in your particular locality, and even with such rough computation as the cost per cubic foot of such buildings, you can arrive at an approximate cost.

Let me beg of you to keep before you at all times the economic impossibility of building a hospital of a given size with insufficient funds. There are too many misleading statements made by both architects and contractors as to what can be done for given sums of money, but up to the present time I have never been able to correlate the actual cost of buildings ultimately erected and the stated cost before even plans were made.

You can only obtain under the most favorable circumstances just so much building for a given amount of money, and there are but two methods in which you can handle your problem; namely, either to put up a hospital commensurate with your means, or to put up the hospital that you desire and obtain the means for building it. If, in no other manner, you can at least obtain your ideals, however modest your institution must be perforce, if at all times your ideas are practical.

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## The Purchase of Hospital Supplies[1]

BY LOUIS H. BURLINGHAM, M. D.,
Assistant Superintendent Peter Bent Brigham Hospital, Boston.

A well-known physician has said, "When I know very little about some subject and wish to learn something about it, I write a book on it." It was with this in mind that I accepted the invitation to write a paper on the purchase of hospital supplies.

In all administrative work, experience is a great asset; nowhere is it of more value than in the purchasing department. A monograph could well be written on this subject by one with adequate experience. I shall attempt to set down only a few facts which have come up in my experience and which I hope may prove stimulating.

In 1904 Dr. H. B. Howard read a paper on this subject at the Sixth Annual Conference of the Association of Hospital Superintendents. As I read this article I was struck very forcibly with the fact that the methods in use at the present time at both the Massachusetts General Hospital and the Peter Bent Brigham Hospital practically follow the same principles, though several minds have been brought to bear on this subject. Changes in details and refinements, of course, have been introduced. There is still the weekly marketing day for perishable foodstuffs, such as meats, butter and eggs, vegetables, and fruits. The comparison book is still in vogue, as is the frequent inspection of the store, and the purchasing is done by a member of the administrative department, no longer the superintendent, but an assistant who has had some training in this work. The price book is now kept in the form of a card index, and if by chance a rarely purchased article should not be listed in this file, it can readily be found in the bill file under the name of the firm.

The store book is replaced by a perpetual stock inventory. This system may be described briefly as follows: All goods as received are inspected as to condition, and weighed or counted by the storekeeper on arrival, and entered on a receiving sheet, which is sent to the bookkeeper's office, a carbon copy being retained by the storekeeper. All bills are checked in the bookkeeper's office by the receiving sheet. Nothing leaves the store but by requisition. A card is kept in the office for each article. On the card are entered the receipts and disbursements, so that at any moment the amount on hand in the store is shown.

Gauze and coffee do not now need to be purchased annually, as we can get quite as good prices in smaller quantities through the Hospital Bureau of Standards and Supplies in New York.

[1]Paper read before the American Hospital Association, San Francisco, June 22-24, 1915.

And right here I wish to say a word about the Hospital Bureau of Standards and Supplies, though I hold no brief for it and our institution has no vote in its management. The Massachusetts General Hospital has proven that the amount saved in money by purchases made through the Bureau is fully equal to the annual dues, and to this must be added the great benefits that accrue through having a carefully determined standard in so many lines of goods.

We still see salesmen but once and then ask that matters of interest be sent to us by mail.

Our method of procedure on marketing day is as follows:

The telephone operator writes down on forms specially prepared to permit easy comparison, the prices quoted her by three or four firms for meats, poultry, vegetables, fruits, butter and eggs, pork products and fish.

Table No. 1

PETER BENT BRIGHAM HOSPITAL

QUOTATIONS—VEGETABLES

| | | | | |
|---|---|---|---|---|
| Asparagus | | | | |
| Beans | | | | |
| Beans | | | | |
| Beets | | | | |
| Brussels Sprouts | | | | |
| Cabbage | | | | |
| Cauliflower | | | | |
| Carrots | | | | |
| Corn | | | | |
| Celery | | | | |
| Cranberries | | | | |
| Cucumbers | | | | |
| Dandelion | | | | |
| Eggplant | | | | |
| Lettuce | | | | |
| Mushrooms | | | | |
| Onions | | | | |
| Parsley | | | | |
| Parsnips | | | | |
| Peas | | | | |
| Potatoes | | | | |
| Potatoes, sweet | | | | |
| Pumpkins | | | | |
| Radishes | | | | |
| Romaine | | | | |
| Spinach | | | | |
| Squash | | | | |
| Tomatoes | | | | |
| Turnips | | | | |

Table No. 1 gives a sample form of the quotation blank used. The other forms are similar.

We accept quotations only from first-class firms, who know that we wish only first-class goods. The prices quoted can be checked easily by reference to the price list published weekly by the Boston Chamber of Commerce, or by the lists which appear in the daily papers. A short examination of the lists enables one to determine where he will probably buy, and lay out his route of travel accordingly. The personal inspection of beef, lamb, mutton, veal, the sampling of butter, fruits and some vegetables before placing the order are points we consider of great importance. Nearly an hour is spent in traveling to and from the market, and somewhat over two hours in the actual purchasing. Thus the morning routine work and the marketing can be accomplished by 1:30 P. M. The goods are all in the store and ready for inspection by 5 o'clock. This inspection is to make sure that deliveries correspond with purchases and allows a more careful inspection of goods bought from samples.

We buy our beef whole, and prefer corn-fed steers, weighing from 800 to 850 pounds, well rounded in the hind leg and loin, and with forequarters plump; and avoid those with lean necks and large shins. The suet should be well distributed and not laid on in heavy layers outside the muscle; it should show a general mottling of fat on cut transverse section; there should be a sufficient covering of fat on the inside of the ribs. A market man of wide experience states that in old or grass-fed animals the choicer cuts are depreciated in a much larger proportion than in the better animals. We like to see the meat of a cherry red or lighter color, the fat not too yellow. In younger cattle, the inner side of the ribs has a reddish hue, and the tip of the pelvic bone is supposed to show a softer cartilage covering than in older animals. If buying only hinds, other things being equal, buy the left as they are hung up, as the kidney suet on this side is several pounds lighter than on the other. It goes without saying that sides of beef should hang for four weeks or rather more to attain their finest flavor and tenderness. Full corn-fed beef, as compared with grass-fed or part corn-fed, has a better, redder color, called "bloom" by the market men, and when cut the surface does not seem to sink, but almost to protrude from its surrounding ribs and fat.

Frozen beef may at times be as much as a cent a pound cheaper than fresh meat, but freezing seems to be a greater detriment to beef than to any other meat, because of the loss of tissue juices when the meat is thawed, and because frozen meat cannot be properly aged by hanging. When beef which has been frozen and thus thawed is struck several times sharply with the hand, the cut surface shows a weeping of tissue juices.

Many of the general statements made in regard to beef apply to lambs, mutton and veal, though we do not feel that they are injured quite as much by freezing. Mutton should weigh 65 to 70 pounds dressed. Corresponding to the steer, the wether sheep furnishes the best mutton. Lambs should weigh 35 to 40 pounds; genuine spring lambs show a square surface covered with cartilage when the second joint is broken; after they are a year old this joint becomes round. Another point of difference is that when the hoof is removed, in the young animal it shows a toothed surface, but covered with cartilage; in the older animal this toothed appearance can be produced artificially, but, of course, there is no way of covering it artificially with cartilage. Veal should weigh 80 to 100 pounds, and be 4 to 6 weeks old. We find pork loins weighing 10 to 12 pounds usually the best. Freezing does not seem to injure pork loins especially.

The statements I have made in regard to frozen goods apply only to products that were frozen when in prime condition. Goods which have been frozen after the process of decomposition has begun cannot be too strongly condemned.

We all wish to have as great a variety in our menus as possible, but we never can get away from the daily per capita cost. Food in its natural season is always better than that which is produced under artificial conditions or held in cold storage, though both of these may be very good.

I have found the following tables of much use in determining the right times to purchase fish, fruit and vegetables:

Table No. 2

PETER BENT BRIGHAM HOSPITAL

FISH

| | Seasons | Prices | | Percentage of Waste |
|---|---|---|---|---|
| Bluefish | April to October | $0.10 to | $0.18 | 10% |
| Butterfish | May to October | .08 to | .15 | 10% |
| Cod | All year round | .03½ to | .08 | 8% |
| Clams | All year round | | .90 gal. | ..... |
| Clams for Steaming | All year round | | 2.00 bu. | ..... |
| Finnan Haddie | All year round | .08 to | .12 | ..... |
| Flounders | All year round | .04 to | .08 | 10% |
| Haddock | All year round | .03½ to | .08 | 10% |
| Halibut (large) | All year round | .10 to | .20 | 7% |
| Mackerel (medium) | May to October | .12 to | .30 | 10% |
| Jack Shad | February to June | .10 to | .20 | 10% |
| Roe Shad | February to June | .12 to | .30 | 10% |
| Swordfish | June to October | .12½ to | .30 | 20% Bone out |
| Spanish Mackerel | All year round | .10 to | .30 | 10% |
| Smelts | June to March 15 | .10 to | .20 | 20% |
| Sea Trout | All year round | .06 to | .20 | 10% |
| Western Salmon | All year round | .12½ to | .30 | 15% |
| Oysters | Sept. to June 1 | 1.10 to | 1.50 gal. | ..... |
| Quahaugs | All year round | 1.50 to | 2.00 gal. | ..... |

TABLE No. 3
PETER BENT BRIGHAM HOSPITAL
FRUIT

| | Seasons | Prices | | | |
|---|---|---|---|---|---|
| Bananas | From January to January | $0.02¾ | to | $0.03½ | lb. |
| Berries, Straw | From February to August | .10 | to | .35 | qt. |
| Black | From August to October | .10 | to | .20 | qt. |
| Rasp | From July to September | .10 | to | .20 | pt. |
| Blue | From June to September | .10 | to | .20 | pt. |
| Cantaloupes | From May to October | 2.00 | to | 3.50 | crt. |
| Cherries | From June to August | .10 | to | .25 | qt. |
| Currants | From July to August | .06 | to | .18 | qt. |
| Dates | From November to June | .06 | to | .08 | lb. |
| Figs | From November to June | .10 | to | .18 | lb. |
| Grapes, Natives | From July to June | .10 | to | .20 | basket |
| Malagas | From September to March | 3.00 | to | 6.00 | keg |
| Grape Fruit | From January to January | 2.00 | to | 5.00 | box |
| Lemons | From January to January | 2.00 | to | 4.00 | box |
| Oranges | From January to January | 1.50 | to | 4.50 | box |
| Peaches | From July to October | .75 | to | 1.75 | basket |
| Pears | From July to March | .75 | to | 1.75 | box |
| Pineapples | From January to January | 2.00 | to | 5.00 | crt. |
| Plums | From July to November | 1.50 | to | 3.00 | crt. |
| Rhubarb | From February to August | .01 | to | .15 | lb. |
| Watermelon | From July to October | .35 | to | .60 | each |

TABLE No. 4
PETER BENT BRIGHAM HOSPITAL
VEGETABLES

| | Seasons | Prices | | | |
|---|---|---|---|---|---|
| Asparagus | From March to July | $1.50 | to | $3.00 | doz. |
| Beans, String | From January to January | .50 | to | 4.00 | bu. |
| Shell | From August to November | 1.00 | to | 2.00 | bu. |
| Lima | From July to February | 1.00 | to | 3.00 | bu. |
| Beets | From January to January | .50 | to | 1.50 | bu. |
| Cabbage | From January to January | 1.00 | to | 2.25 | bbl. |
| Cauliflower | From September to April | 1.00 | to | 2.50 | bu. |
| Carrots | From January to January | .50 | to | 1.00 | bu. |
| Corn | From July to October | .75 | to | 1.75 | bu. |
| Celery | From July to May | 1.00 | to | 1.75 | doz. |
| Cranberries | From January to January | 4.00 | to | 8.00 | bbl. |
| Cucumbers | From January to January | .40 | to | 1.50 | doz. |
| Dandelions | From March to August | .50 | to | 1.50 | bu. |
| Eggplant | From January to January | .75 | to | 2.50 | bu. |
| Lettuce | From January to January | .25 | to | 1.00 | bu. |
| Mushrooms | From January to January | .75 | to | 2.00 | basket (3 to 4 lbs.) |
| Onions | From January to January | 1.00 | to | 2.00 | bag (2 bu.) |
| Parsley | From January to January | .50 | to | 2.00 | box |
| Parsnips | From January to January | .50 | to | 1.50 | box |
| Peas | From April to September | 1.00 | to | 3.00 | box |
| Potatoes | From January to January | 1.50 | to | 5.00 | bbl. |
| | | .50 | to | 1.00 | bu. |
| Pumpkins | From September to January | .50 | to | 1.00 | bu. |
| Radishes | From January to January | .20 | to | .45 | doz. |
| Romaine | From January to January | .25 | to | 1.50 | bu. |
| Spinach | From January to January | .25 | to | 1.50 | bu. |
| Squash, summer | From March to September | .75 | to | 3.00 | bu. |
| native | From August to July | 1.00 | to | 3.00 | bu. |
| Tomatoes | From January to January | .75 | to | 4.00 | bu. |
| Turnips | From January to January | .40 | to | 1.00 | bu. |

TABLE No. 5
FRUITS, VEGETABLES AND NUTS
Established Legal Weights per Bushel, 1914
Weights of one bushel, one peck and one quart of certain vegetables, etc., as provided by the laws of Massachusetts

| | 1 Bu., lbs. | 1 Peck, lbs. | 1 Quart, ozs. | | 1 Bu., lbs. | 1 Peck, lbs. | 1 Quart, ozs. |
|---|---|---|---|---|---|---|---|
| Apples | 48 | 12 | 24 | Oats | 32 | 8 | 16 |
| Apples, Dried | 25 | 6¼ | 12½ | Onions | 52 | 13 | 26 |
| Barley | 48 | 12 | 24 | Parsley | 8 | 2 | 4 |
| Beans | 60 | 15 | 30 | Parsnips | 45 | 11¼ | 22½ |
| Beans, Lima | 56 | 14 | 28 | Peaches | 48 | 12 | 24 |
| Beans, Shell | 28 | 7 | 14 | Peaches, Dried | 33 | 8¼ | 16½ |
| Beans, Soy | 58 | 14½ | 29 | Peanuts, Green | 22 | 5½ | 11 |
| Beans, Scarlet or White Runner, Pole | 50 | 12½ | 25 | Peanuts, Roasted | 20 | 5 | 10 |
| Beans, String | 24 | 6 | 12 | Pears | 58 | 14½ | 29 |
| Beans, Windsor (broad) | 47 | 11¾ | 23½ | Peas, Smooth | 60 | 15 | 30 |
| Beets | 60 | 15 | 30 | Peas, Unshelled Green | 28 | 7 | 14 |
| Beet Greens | 12 | 3 | 6 | Peas, Wrinkled | 56 | 14 | 28 |
| Bran and Shorts | 20 | 5 | 10 | Potatoes | 60 | 15 | 30 |
| Buckwheat | 48 | 12 | 24 | Potatoes, Sweet | 54 | 13½ | 27 |
| Carrots | 50 | 12½ | 25 | Quinces | 48 | 12 | 24 |
| Corn, Cracked | 50 | 12½ | 25 | Rice, Rough | 44 | 11 | 22 |
| Corn, Indian | 56 | 14 | 28 | Rye | 56 | 14 | 28 |
| Cranberries | 32 | 8 | 16 | Salt, Coarse | 70 | 17½ | 35 |
| Dandelions | 12 | 3 | 6 | Salt, Fine | 50 | 12½ | 25 |
| Feed | 50 | 12½ | 25 | Seed, Clover | 60 | 15 | 30 |
| Flaxseed | 55 | 13¾ | 27½ | Seed, Herd Grass | 45 | 11¼ | 22½ |
| Kale | 12 | 3 | 6 | Seed, Sea Island Cotton | 44 | 11 | 22 |
| Lime | 70 | 17½ | 35 | Seed, Timothy | 45 | 11¼ | 22½ |
| Meal (except Oatmeal) | 50 | 12½ | 25 | Seed, Upland Cotton | 30 | 7½ | 15 |
| Meal, Corn | 50 | 12½ | 25 | Spinach | 12 | 3 | 6 |
| Meal, Rye | 50 | 12½ | 25 | Tomatoes | 56 | 14 | 28 |
| Millet, Japanese | 35 | 8¾ | 17½ | Turnips | 55 | 13¾ | 27½ |
| | | | | Wheat | 60 | 15 | 30 |

BARREL

| | | |
|---|---|---|
| Flour | 196 | pounds |
| Potatoes | 165 | pounds |
| Potatoes, Sweet | 150 | pounds |
| Liquid Barrel | 31½ | gallons |
| Hogshead | 2 | barrels |

By the use of these tables we are able to furnish a satisfying amount of these products when they are best in quality and lowest in price. The fish table enables me to tell also if the shrinkage in amount received, compared with the amount ordered, is due to dressing or to short weight.

The quantities of vegetables received can be checked up by comparison with a list furnished by the local sealer of weights and measures. This list gives the weight of a bushel, peck and quart of practically all materials sold by dry measure, alphabetically, from apples to wheat, including altogether 54 different items.

On the first of each month we ask three standard firms to bid on a list of groceries. We ask for quotations on first-quality goods, but state that we are willing to be informed of any "good buys" that we can be offered. Inasmuch as we know the quality, we place the orders according to the prices submitted. This enables the firms to know just where their bids are too high, and yet, inasmuch as there are only three competing firms, each gets an order that is worth striving for.

Canned goods are purchased yearly from samples furnished through the Hospital Bureau of Standards and Supplies and from two or three local dealers. We retain unopened cans of each variety so that we can compare the goods as delivered, side by side, with the original samples.

On all sides we hear the call to standardize, and we are trying to answer the call. We have found that marking all materials suitable for this purpose with the date they were put into commission is very serviceable, and lately we have been adding the initials of the firm from which they were purchased. As we use a marking machine for all goods passing through the laundry, this adds an infinitesimal amount of labor. Articles of metal or wood are easily marked by means of steel stamps; for wood we also use, when more suitable, a burning brand.

We are fortunate in being able to take our ten-day discount on every bill where it is allowed.

Generally speaking, we have not found it profitable to try to beat the market by laying in large supplies when prices seem favorable, though at times we are able to make quite a saving in this way.

## The Company Hospital[1]

BY R. W. CORWIN, M. D.,
Chief Surgeon Colorado Fuel and Iron Company, Pueblo, Colo.

[Dr. Corwin had intended to use a large number of lantern slides and by their means to conduct the convention audience through the Minnequa Hospital at Pueblo. Want of facilities in the convention hall prevented this demonstration, greatly to the regret of those present. —Ed. Note.]

The Colorado Fuel and Iron Company has coal and iron mines and lime quarries located in Colorado, Wyoming, New Mexico, Utah and California, some over five hundred feet above sea level, others ten thousand feet. These camps employ from fifty to five or six hundred men each when in full operation.

The company also has a steel works at Pueblo, Colorado, where it employs from 3,500 to 5,000 men. Forty-two or more dialects are spoken.

Welfare work is carried on in some form or another whenever the company plants are in operation.

### STEEL WORKS DISPENSARY

At the entrance of the steel works, in the yard with the general offices, is located the dispensary. It has a staff of four regular physicians—no interns. There is in attend-

[1]Read before the Seventeenth Annual Conference of the American Hospital Association, San Francisco, June 22-25, 1915.

Fig. 1. Minnequa Hospital, Pueblo, Colo.
Main entrance.

West wing.

East wing.

ance always one or more of the doctors. Here is kept a complete assortment of drugs and medicines and surgical supplies for emergencies. 62,881 cases were treated at the dispensary last year.

MINNEQUA HOSPITAL

The location of Minnequa Hospital of the Colorado Fuel and Iron Company at Pueblo is ideal. The grounds occupy an eminence on a broad mesa overlooking beautiful Lake Minnequa. To the west forty miles are the Cuerno Verde and the Sangre de Cristo mountain ranges; fifty miles to the north, Pike's Peak, and seventy-five miles to the south, the Spanish Peaks.

Fig. 2. Minnequa Hospital, Pueblo, Colo. Inclines used instead of stairs. Fall, 12 feet.

The architecture is known as Spanish Mission; the construction is of brick and cement; the roof, red tile. The absence of verandas is noteworthy. A wide veranda obstructs light and air, and is unsanitary. Ill persons are annoyed by the congregating of people on the outside.

The gate at the south entrance to the hospital grounds is of cement construction, Spanish Mission style, harmonizing with the hospital structure. At the west entrance there is another Mission gate, of wood construction. A walk leads from the south gate to the hospital, on each side of which is a row of flowering hedge.

Just inside the grounds is the recreation hall. It is supplied with smoking and reading rooms, furnished with rustic chairs, tables and book cases, and a fireplace. Here the convalescent enjoy many hours, playing games, reading and visiting friends.

The rustic bridge, which crosses a beautiful grassy lake, is one of the most artistic spots on the grounds. The twenty-acre lawn with an abundance of shade may be called a general ward for the convalescents. Fresh air is administered freely and most gratefully do the patients respond to Nature's remedy.

Every patient is kept out of doors as much as possible. There are open-air tents for those suffering from pulmonary troubles, and a pavilion for contagious cases.

The entrance to the hospital is approached by an inclined driveway rising a half-story, covered by a porte-cochere. A patient may be taken from the ambulance on a wheel stretcher and rolled to any part of the building without being jarred or shaken, as inclines are used in place of stairs and elevators, through the hospital. Stairs make it hard for both patients and attendants, and the elevator is often out of order or the operator not at hand. Inclines do away with all these objections, to say nothing of the comfort to the patients and convenience to attendants. They make it almost as easy to go from one story to the next as to walk on the level floor.

Entering the front door, one is attracted to a beautifully decorated corridor. Bright flowers and plants on rustic stands relieve the eye, and the baskets and boxes of flowers over the doors shed an atmosphere of cheerfulness not found in most hospitals. Over the archway of this corridor is a painting—"The Allegory of Silence"—done by Professor Ernesti.

One is impressed with the plainness and simplicity of the architecture. It is perfectly simple, but attractive; doors are panelless and transomeless; there is not a shade at any window, but instead the washable "Minnequa Curtain," noiseless in the wind, part or all easily removed, and so arranged that much, little or no light may be admitted.

Fig. 3. Operating room, Minnequa Hospital, showing lead wall.

The capacity of the hospital is 216 beds. Every room is an outside room.

Showers and rubbing slabs take the place of bath tubs. A very important feature is the arrangement of the plumbing, which has been placed far enough from the wall to admit of its being easily got at from all sides. There is no boxing-in, but everything may be reached by the housemaid and thoroughly cleaned.

All corners are rounded, above, below and at the sides, hence all surfaces are easily cleaned, and dust does not readily accumulate.

The floors are laid with a cork carpet, which is noiseless, not cold, and soft to the feet. It is a rare exception for a nurse to complain of discomfort to her feet.

All rooms are decorated with pictures in black and white, and paintings. The pictures in each room form a group illustrating a country or theme; for instance, an English, a Dutch, a Japanese, a Spanish or Indian room. No two rooms are draped alike, but each is made to harmonize with its pictures. The reason for this idea is to relieve the patient when tired of his surroundings by changing him to another room with entirely different surroundings. The pictures are hung low so that they may readily be removed and cleaned.

Artificial flowers, which today are made so perfectly that they are commonly mistaken for the natural, are used extensively in the rooms and corridors. The artificial flower has the advantage of long life. A dying plant is suggestive to a sensitive and seriously ill patient. In the sick room often not enough attention is given to little things such as this.

Each floor has a linen apartment. In the center of each room stands a stack of shelves with a round top, away from the wall so that it may be approached from all sides and easily cleaned. In place of bureaus or chiffoniers a chest of shelves and hooks is used, opening on both sides, so that they can be cleaned through and through.

The Indian sun parlor is especially artistic, with the Indian bowls, Navajo rugs, and decorations of brilliant foliage, and is much used during inclement weather. It leads to the nursery, which is complete in every detail.

The operating room is a decided innovation, as it is lined throughout with sheet lead. On the floor the lead weighs twelve pounds to the square foot, and on the sides and ceiling, six pounds. The ceiling slopes to carry any condensation of moisture to the sides. The room is sterilized with live steam. It is heated by the indirect system. Screened air is forced into the room and the air from the room is exhausted by electric fans. Light is admitted from but one side, the north, thus preventing cross lights. The walls are dark, absorbing light, which is a relief to the operator.

Lead is waterproof, nonabsorbent and crackless, thus affording no lodging places for germs and admitting of thorough cleaning. It is airtight and waterproof, not easily damaged, and if punctured is readily repaired; it expands and contracts without fracture, is noiseless, not slippery and does not reflect light. What more can one ask?

The room in which anesthetics are administered is painted green and decorated with pictures and frames in sepia and other browns—colors which psychologists say are least irritating to the brain.

Fig. 4. COMPARISON OF THE WHITE WITH THE BLACK OPERATING SHEET.

Vision depends on reflection. If a dark sheet is used the wound reflects more strongly than the sheet because the latter absorbs much of the light.

If a light sheet is used, it reflects more than the wound, the sheet reflection predominating; hence the wound is poorly seen, whereas with a dark cover the wound reflection predominates.

The advantages of a dark sheet are that it absorbs light, rests the eye, and the predominating reflection is from the wound.

The disadvantages of the white sheet are that it reflects strongly, tires the eyes and produces feeble contrast.

It is contrast that is desired. The dark sheet is to the surgeon what the dark room is to the ophthalmologist.

There are both x-ray and pathological laboratories. The former has a Scheidel-Western interruptless x-ray coil, with all accessories for doing the fastest and most deep-seated work. Extensive use is made of both these departments.

Minnequa Hospital has a nurses' training school. During the junior year they study anatomy, nursing, materia medica, bacteriology and medicine. The second or intermediate year they are taught anatomy, nursing, bacteriology, dietetics, materia medica, bandaging, nursing ethics and medicine. The senior year embraces the study of clinics, anatomy, obstetrics, bandaging, surgical technic and materia medica, and lectures on hygiene, gynecology, eye, ear, nose, throat, etc.

The Minnequa Hospital farm, about seven miles from Pueblo, has a herd of forty-eight selected cows and 700 chickens. It furnishes the hospital with milk, cream, poultry and eggs.

[Following the description of the hospital, an outline of the welfare work was presented. The following list gives an idea of what is being done and what is contemplated.—Ed. Note.]

*Welfare is essential to the company's interest and is not a philanthropic, but a business policy.*

- **Preventive**
  - Direct
  - Indirect
- **Curative**
  - Medical
  - Surgical
- **Direct**
  - First aid
  - Safety first
  - Examination
  - Vaccination
  - Sanitation
  - Education
- **Indirect**
  - House and home surroundings
  - School
  - Church
  - Night school
  - Lectures
  - Bulletins
  - Social clubs
  - Parents' meetings
  - Boy Scouts
  - Camp Fire Girls
  - Nurse
- **First aid**
  - Draeger helmets
  - Pulmotors
  - Self-rescue outfits
  - Rescue cars
  - Stretchers
  - Ambulance
  - Drill corps
- **Safety first**
  - Fool-proof protection
  - Signs, printed
  - Signs, electric
  - Danger signals
  - Notices in different languages
  - Photos
  - Displays
  - Literature
  - Rules, enforced
  - Inspectors
  - Reporting of dangerous places
  - Fire protection
  - Goggles
  - Shoes, special
  - Lock
- **Sanitation**
  - Ventilation
  - Light
  - Heat
  - Drinking water
  - Wash rooms
  - Paper towels
  - Lockers
  - Toilets
  - Urinals—convenient
  - Corps of cleaners
  - Rubbish cans
  - Fumigation
  - Painting
  - Camp cleaners
  - Reports
- **Education of management, superintendents, bosses..**
  - Importance of welfare work
- **Education of employees....**
  - Interpreter
  - Safety
  - First aid
  - Lectures
  - Moving pictures
  - Health bulletins
  - Posters
  - Nurse
  - Personal contact
  - General bulletins
- **House and home surroundings....**
  - Sanitation
  - Finances
  - Expenses
  - Food
  - Physical condition
  - Mental condition
  - Vice
  - Social relations
  - Civic relations
  - Education
  - District nurse
  - Recreation
- **Medical and surgical departments....**
  - Minnequa Hospital, Pueblo
  - Steel works dispensary
  - Camp dispensaries
- **Examination..** Physical, Mental, Moral — Compulsory on admission
  (Re-examination periodically.)
- **Immunization.** Smallpox, compulsory; Typhoid, if desired
- **Immunization.** Diphtheria, Tetanus, Rabies — When needed

### Correction re Mr. Bartine's Paper on Hospital Construction

Mr. Oliver H. Bartine wishes acknowledgment given to Messrs. Marc Eidlitz and Son, for their valuable cooperation in the preparation of the important cost data tables printed in the last number of THE MODERN HOSPITAL. Messrs. Eidlitz's name was omitted by oversight.

The order of Columbian Woodmen is considering the establishment of a sanatorium at Gloster, Miss.

# CURRENT HOSPITAL LITERATURE

ALBERT ALLEMANN, M. D., Foreign Literature.
*Army Medical Museum and Library, Office of the Surgeon-General United States Army.*

**Women in Military Hospitals.** The Hospital, London, 1915, LVIII, No. 1526.

A scheme is being inaugurated for women of the Voluntary Aid Detachment of the British Red Cross Society to take the places of men in the military hospitals. Thousands of men now acting as dispensers, clerks, stockkeepers and cooks may thus be set free for active service.

**The Need for Psychiatric Clinics.** N. Y. Med. Jour., 1915, CII, No. 11.

The scarcity of facilities in our large centers for the treatment of mental disturbances and the impossibility of meeting the needs of mental patients in existing neurological clinics, are cited in this plea for the establishment of clinics in connection with state hospitals for the insane. It is suggested that such clinics should be maintained in large population centers, and be administered by physicians who are the interns of state hospitals.

**The Social Service League of Shanghsha.** Lotta Carswell Hume. The Survey, 1915, XXXIV, No. 26.

Mrs. Hume studied nursing at Johns Hopkins Hospital under Adelaide Nutting and demonstrates her convictions of the importance of this work in her story of the social service movement in Shanghsha. Among other present urgent needs for a social service movement in China, the writer mentions trained workers to organize and direct civic movements, and adds: "In almost every center the hospital will be found the natural starting point for such work."

**A New Bed Roller** (Een nieuw bed-rijder). Ziekenhuis, Amsterdam, 1915, VI, No. 5.

The transport of hospital patients frequently presents difficulties, especially if the patient is in a condition forbidding much handling. The author describes an apparatus which obviates these difficulties. It consists essentially of a strong iron frame, which rests on four wheels provided with rubber tires. This frame carries a lifting device. The apparatus is rolled under the bed to be transported. By simply pressing down a lever the bed is raised from the floor, and resting entirely on the frame it can be rolled to any place desired. Two illustrations show the details of the apparatus.

**A Central Purchasing Office for Hospitals and Asylums in the Netherlands** (Een centraal inkoopbureau voor ziekenhuisen en gestichten in Nederland). M. Pimentel. Ziekenhuis, Amsterdam, 1915, VI, No. 6.

The author proposes the following plan for a central purchasing office for the Dutch hospitals. The organization, of which any hospital may become a member, establishes a central office managed by a business man. The hospitals send lists of the articles wanted to the central of-

fice, mentioning quantity, price or other details. The office corresponds with the various manufacturers, who, on their part, make proposals as to quality, price, etc., from which the hospitals can make their selection. Such an office would confine its work only to the purchase of apparatus, instruments and pharmaceutical articles. The author considers this plan superior to a cooperative purchasing association, where the central office would do the buying for all hospitals.

**A Profitable Hospital Garden.** The Hospital, London, 1915, LVIII, No. 1527.

The Royal Devon and Exeter Hospital, Exeter, founded in 1741, is situated in the heart of the city almost within the shadow of the towers of the world-famed cathedral, and still has about two acres of gardens and grounds. Half an acre is devoted to recreation grounds and the remainder utilized for fruit and vegetables. The hospital publishes detailed reports from the gardener's day-book of 1914, showing the aggregate yields in fruit and vegetables, to prove that this hospital has the immense advantage of having its day's consumption at immediate command, and that the garden is also a source of profit from a financial point of view.

**Hospital Trains of the Red Cross** (I treni ospedale della Croce Rossa). Ospedale Maggiore, Milano, 1915, III, No. 6.

The Italian Red Cross has fitted out twenty-two hospital trains, each of which can transport 206 patients. On each train a director, a physician-in-chief, four assistant physicians, a pharmacist, a chaplain, and a varying number of male and female nurses. Each train contains a kitchen, a pharmacy and an operation room, where in urgent cases operations are performed while the train stops at the various stations. Four similar trains have been furnished by the Knights of Malta, so that the total capacity of the Italian hospital trains is 5,356 beds.

**Medical Students in War Time.** The Hospital, London, 1915, LVIII, No. 1526.

The following table shows approximately the number of students in certain medical schools during the first year of war compared with the normal figures:

| | Normal Numbers | 1914-1915 |
|---|---|---|
| St. George's | 80 | 20 |
| St. Bartholomew's | 450 | 285 |
| King's College Hospital | 70 | 45 |
| King's College | 232 | 107 |
| Cambridge | 164 | 111 |
| Manchester | 300 | 250 |
| Leeds | 150 | 100 |
| Liverpool | 166 | 123 |
| Aberdeen (men) | 300 | 250 |
| Glasgow (men) | 650 | 600 |
| Total | 2,562 | 1,891 |

A further serious fall in numbers is anticipated for the term which opens this month.

**The Obstetrical Division of the Maria Vittoria Hospital** (La sezione ostetrica dell' Ospedale Maria Vittoria). Dr. Fino. Giornale d. Osped. Maria Vittoria, Torino, 1915, XV, No. 2.

In 1909 the Maria Vittoria Hospital in Turin established an obstetrical service for poor but worthy women. But the work grew more and more, so that the hospital did not have room enough to accommodate all the patients that applied for beds. In 1914 the managers of the hospital decided to devote to this work an entire building, which had been the residence of the late Dr. Berruti, and had been generously donated to the hospital by the owner. This building, called "palazzina," is located only a short distance from the hospital and is surrounded by a large and luxurious garden, thus forming an ideal place for the patients it is intended to receive. The building has three stories and is equipped with all the modern appliances and improvements.

**Increased Vegetable Diet in Hospitals** (Vermehrte Gemüsekost in Krankenhäusern). Dr. H. Kraft. Heilanstalt, Leipzig, 1915, X, No. 13.

In examining the dietaries of the German hospitals the author finds that with few exceptions the vegetables are not given the place due them. Meat with cereals in the form of bread, pastries, rice, macaroni, etc., form the chief food. The vegetables proper (leaf and root vegetables—if the potatoes are excepted) play a very inferior role in the dietary. No wonder that the patients get tired and complain of the food served them! A mainly albuminous diet is frequently harmful to the patients. In fever patients albuminous food increases intestinal fermentation and thereby favors the continuance of the febrile conditions. But in cooking vegetables they should not be boiled, as is frequently done, because the most valuable substances are thrown away with the water. To get the full value out of vegetables, they should be steamed.

**The Efficiency of the Smaller Hospital.** W. E. Browning. The Railway Surg. Jour., XXII, No. 1.

The varied and complex elements constituting hospital efficiency and their relationship to patient, community and hospital staff are taken into consideration in arriving at the firm belief, after twelve years' experience with a small institution that "it is not only possible but feasible and practical to build and equip in a town of less than 2,000 people, a thoroughly modern hospital, equipped with every comfort and convenience to the patient that can be obtained in any large city hospital, plus the additional asset of fresh air, quiet and freedom from dust and traffic."

The arguments for the so-called "hospital village," in the writer's opinion, apply as forcefully to the smaller institutions in our rural towns, and calls attention to the fact that the hospital is trending—in so far as is consistent with the better means of conveyance today—toward the country districts.

**An Operation Room at the Front** (Une salle d' opération sur le front). Dr. A. Mignon. Paris médical, 1915, V, No. 10.

The present war has changed many earlier views on military surgery. Thus it was formerly believed that gunshot wounds of the abdomen were best let alone, the patient abstaining for a time from all solid and liquid food. But in the present trench fighting operation rooms are now established not more than one or one and one-half miles behind the firing lines. In cases of gunshot wounds of the abdomen, the surgeons now do not hesitate to open the abdomen frequently less than twenty minutes after the wound was inflicted, and they get much better results. The author describes an operation room at the front whose component parts can be transported on a carriage and which can be put up in an hour in any building or "wherever four walls are left standing." The ceiling and walls of the room are formed by sheets of strong canvas supported by light wire ropes, which are attached to eight hooks. The walls contain one or two doors and as many windows. The ceiling contains a hole in the middle, through which passes the pole of a chandelier and which supports the canvas of the ceiling. The maximum dimensions of the room are about four yards square and three yards high. The dimensions may be reduced according to the size of the locality where the room is installed. The

floor is formed by heavy rubber sheets. A Dion-Bouton apparatus furnishes the electric light. The furnishings consist of an operation table, x-ray apparatus, autoclave, water sterilizer, disinfecting apparatus, etc.

**The New Buildings of St. George's General Hospital in Leipzig-Eutritzsch.** Scharenberg & Zettler. Heilanstalt, Leipzig, 1915, X, No. 13.

The new St. George's Hospital of the city of Leipzig is located north of the city. The grounds comprise 214,700 square meters. The administration building contains waiting, reception and examination rooms, as well as rooms for the physicians and nurses, a pharmacy, laboratories, a lecture room and a central telephone station. Each of the four handsome hospital buildings is 85 meters long, and consists of a basement, two stories and an attic. There is room for 184 beds in each building. All four buildings are connected by a covered gallery with the operation building, which has two operation rooms, one for aseptic, the other for septic operations, also a sterilizing and an x-ray room, laboratories, etc. Two buildings, each 70 meters long, are intended to receive patients with pulmonary tuberculosis. There is also an observation building for patients with infectious diseases, and a pathological institute provided with the most modern apparatus and instruments. Among the other structures may be mentioned the kitchen building, a large laundry, a workshop, a building for the central heating plant and a disinfecting house. This great hospital was built in less than three years at a cost of 9,179,748 marks ($2,294,937), or 7,881 marks ($1,970) per bed.

**Insanity and the War.** Ed., The Lancet, London, 1915, II, No. 10.

Commenting on the remarkable decrease in the number of admissions to the Belfast District Hospital for the Insane during the past year, compared with the twelve months preceding, Dr. William Graham, the superintendent, is quoted as holding that "it is not the great tragedies of life that sap the forces of the brain and wreck the psychic organism—on the contrary, it is the small worries, the deadly monotony of a narrow and circumscribed existence, the dull drab of a life without joy and barren of achievement." He believes that one of the eventual results of the war will be a great decrease in the amount of mental instability which has been increasing in recent years; that people will return to the virtues of a simpler life, partly by choice and partly by necessity, and may well entertain the hope that what they have sowed in tears those who come after them will reap in joy.

**Cubic Air Space for Bottle-Fed Infants.** Thomas S. Southworth. Archives of Pediatrics, 1915, XXIII, No. 9.

Experience of eighteen years with institutions caring largely for bottle-fed infants has impressed the writer with the belief that 600 cubic feet of air space per infant was inadequate. In the hope of securing some definite data of value and authority, a questionnaire was sent to each member of the American Pediatric Society. The following conclusions are based on answers received:

1. The majority (21 in number) of the hospitals and institutional wards for infants from which reports of cubic air space were received provide 1,000 cubic feet and upward of air space for each inmate, and only five reported 600 cubic feet or less.
2. Even with 1,000 or more cubic feet of air space free ventilation is deemed highly important, and as the space decreases such free ventilation becomes more and more imperative.
3. No allowance of cubic air space is at present made for the necessary attendants in wards.
4. Reduced cubic air space means less square feet of floor space and less separation between cribs, with proportionately increased opportunity for the spread of cross infections. There is a growing belief that even with free ventilation separation of the beds plays as important a role as cubic space. Such adequate separation, however, is only attainable with large cubic air space.
5. On account of their handicaps, bottle-fed infants are more liable to require more space than nursing infants.
6. Bottle-fed infants require as much cubic space as so-called sick, "medical," or "surgical" cases among infants.
7. The majority of pediatric physicians believe that infants should have as much cubic air space as adults, if not more, and this is especially true of bottle-fed infants, because they are more susceptible to infection, suffer in their nutrition in confinement, and notoriously do badly in all save the best equipped institutions.
8. Bottle-fed infants, when retained for any considerable length of time in hospitals or institutions, cannot properly be classed as well infants because a considerable proportion of them suffer both in their digestion and nutrition, besides forming acute intercurrent affections, and therefore require unusual attention in their feeding and nursing care.
9. Limited cubic air space, involving limited floor space, is an important contributory factor, though by no means the only factor, in the high mortality of artificially fed infants, and such crowding in limited space is very commonly the concomitant—if not itself a cause—of faulty hygiene, insufficient care, and inadequate nursing.
10. Even with a liberal allowance of cubic air space, free and abundant ventilation is of equal importance. In addition, provision for roof-gardens, porches and sun parlors is advisable, if not imperative.
11. The mere presence of windows does not of itself constitute ventilation, but their proper use must be provided for.
12. A low minimum of cubic space established by law, without definition of what constitutes efficient ventilation, and without enforcement, may be more harmful than beneficial, and constitute a virtual license to overcrowd in ill-ventilated wards.
13. The example of the more progressive hospitals and institutions, which provide the larger amount of air space per infant, together with free ventilation, is to a considerable extent nullified by state and local regulations licensing, for the less progressive, the employment of minimum air space (contrary to the majority opinion of those best qualified from experience to be judges) for a class of infants among whom there is admittedly an unduly high mortality.

Commissioner Katherine B. Davis has received a check for $18,000 from John D. Rockefeller, Jr., and another of $10,000 from Mrs. William K. Vanderbilt to be applied toward the construction of a new hospital on Riker's Island. Work on a building to accommodate 132 patients will begin at once. It is to consist of four wards, a dining room, kitchen, day room and doctor's quarters. The hospital will be built of hollow tile and stucco in modified mission style. Dr. Ernest S. Bishop will be in charge.

It is reported that the Des Moines (Iowa) General Hospital, heretofore operated by the Still College of Osteopathy, in conjunction with the city, has been acquired by Drs. J. N. Griffin and Thomas E. Gutch, of Albia, Iowa, who will establish a hospital for coal miners. Drs. Griffin and Gutch have been operating a 30-bed hospital for miners at Albia on the insurance plan, by which a monthly payment of 50 cents entitles the miner and his family to needed medical or surgical treatment and hospital care. Increasing demands upon the hospital at Albia has made it necessary to seek larger quarters. The insurance plan will be continued at the Des Moines institution, and it is said that an addition increasing the capacity of the Des Moines Hospital to 175 beds will be erected. The doctors already have 7,000 subscribers.

A handsome building for a general hospital has recently been completed at Middletown, Ohio, at a cost of $47,000. It is a two-story and basement structure of pressed brick, fireproof and soundproof, containing eight private rooms, three two-bed wards and two eight-bed wards. A campaign is being conducted for funds to equip the hospital, and it is expected that it will be opened by the first of next year.

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# FOREIGN CORRESPONDENCE

## Military Hospital Arrangements in Great Britain[1]

PAPER III

There has been an extensive use of school buildings for hospital purposes in various parts of the country, as an emergency measure under war conditions. There are two objections to this plan, which appear to have great force: (1) considerable expense must be incurred in making the adaptation necessary for the accommodation of sick and wounded, and (2) the educational system of the town or district is disorganized. Besides which, the result is somewhat of a makeshift. Nevertheless, the elementary schools in the hands of the military authorities numbered as many as 250 (approximately) in May last, which would imply the ousting of about 130,000 children. It is understood that all the scholars, except about 6,000, were provided for in the neighboring schools, one set of children attending in the morning and another in the afternoon, and in many cases the children being taught out of doors. The tendency has latterly been either to erect temporary structures at comparatively slight cost, but specially designed for the purposes required, and in many cases constructed on the principle of open-air treatment for the wounded; or to take over poor law infirmaries, the accommodation in which has often been found to be larger than was needed for the sick poor of the district, and at the same time very well adapted for the purpose now required. In the metropolitan area the Mile End, Lewisham, Hampstead and Bethnal Green infirmaries have been acquired by the war office, the inmates being accommodated in the infirmaries of neighboring unions.

In the early months of the war many wealthy and benevolent persons offered their private houses for the treatment of the wounded. These offers were at the time gratefully accepted in very many cases, as the need for accommodation was urgent, on account of the unprecedentedly heavy list of casualties; the country was unprepared for the enormous numbers of men placed *hors de combat* and needing to be cared for. In a very short time, however, the existing hospital authorities in London and throughout the country organized their forces and placed a very large number of beds at the disposal of the war office.

For the treatment of officers, private houses, as well as public institutions, have been of great service; but for the army generally it is now, we believe, decided that no further offers of this kind will be accepted, either for auxiliary hospitals or for convalescent homes.

Two special hospitals for officers suffering from traumatic neurosis, or battle shock, have been opened in private houses in Kensington. The one first established at Palace Green, a delightfully retired spot adjoining Kensington Palace, has always been fully occupied, more than a hundred officers having passed through, and nearly all of them having recovered under the influences of rest, quiet and watchful care. A second hospital has now been opened for similar cases in the same neighborhood, at Moray Lodge, Campden Hill, which stands in four acres of ground, and overlooks Holland Park. This house, the residence of Mr. R. L. Harmsworth, has been generously given up by him, and accommodates 33 patients. Owing to the efforts of the Blinded Soldiers' Care Committee, 120 men can now be received into their hostel at St. Dunstan's, Regent's Park, where spacious workshops have been erected in which these poor fellows can be trained in various suitable handicrafts.

The British and German governments have agreed upon a special sign to be used for hospitals, churches, and museums, as a protective against aircraft. This sign consists of a square diagonally divided into black and white segments, and has been painted on the roofs of buildings occupied by patients at the London Hospital and elsewhere. In the event of bombs being dropped near a hospital, which may emit poisonous gases, it is directed that basement and ground floor windows should be closed, as these gases are heavier than air and would not rise to any great height. It is stated that the bombs contain phosphorus dissolved in carbon disulphide. For extinction of fires so caused water is preferable to sand. Happily, there does not appear so far to have been any attack on hospital buildings, or on huts or houses used for the accommodation of the sick or wounded, either military or civilian.

Across the channel the troops of the Indian contingent have two hospitals near Boulogne; one of these is established in the buildings of a Jesuit college, which has been well adapted to the purpose, and has nominal accommodation for 200 patients; in reality, however, it provides for 1,000 or more, having wooden, or galvanized iron, huts erected in the grounds. The medical staff includes officers of the Royal Army Medical Corps and European orderlies and wardmasters, as well as the Indian native establishment of water carriers, sweepers and cooks. These native hospital attendants are necessary on account of the caste restrictions of Indian troops.

The hospital assistance provided by Canada has been on a most generous scale. There are hospitals at Wimereux, Le Touquet, Tréport and Etaples, the last named accommodates 3,000 patients and is staffed by the Universities' contingent. In addition, Canada has contributed large sums of money, besides providing twelve motor ambulances and large supplies of shoes and clothing.

At Cliveden, on the Thames, the Red Cross Hospital has been enlarged to accommodate 500 patients, at a cost of £25,000; and two convalescent homes have been established in Kent, which provide for 700 or 800 inmates. Besides this, the Red Cross Society has contributed £2,500 for a Canadian ward in an additional hospital provided by the Order of St. John of Jerusalem. The medical and nursing staffs of these hospitals are entirely Canadian.

*Hospitals in France.* A great variety of buildings have been utilized for hospital purposes across the channel; hotels, schools, barracks, factories, etc. This, of course, renders the work of administration, as well as the actual care of patients, more difficult; but war, as the proverb says, "is full of trouble." In one instance, we hear, most of the equipment of a general hospital fell into the hands of the enemy, and the establishment evaporated into space. At present the main hospitals abroad are in the neighborhood of Rouen and Boulogne. What was formerly known as the Duchess of Westminster Hospital, now No. 1 Red Cross Hospital, is established at Le Touquet, near Etaples, about 25 miles from Boulogne. A very large hospital base is in existence at Rouen, where every kind of building has been taken over for this purpose; and besides, hospital marquees

[1]Paper I appeared in THE MODERN HOSPITAL of May, 1915; Paper II in THE MODERN HOSPITAL of October, 1915.

Motor car parade, Grove Park, London.

have been erected, with boarded floors, double roofs and every convenience; also huts, double-walled, well raised from the ground, and in every respect suitable for the treatment of serious cases.

As the outcome of experience as to the best working plan for administering the medical arrangements of the line of communications, it has been found that practically all the British military hospitals in France (especially in the Boulogne area) are best used as "clearing stations"; that is, all cases are sent to England for treatment unless either they are likely to be able to return to active duty within three weeks or their condition is so grave as to make immediate hospital treatment necessary. The officer in charge of the hospital reports twice daily to his administrative chief his requirements for transport of patients, specifying those fit for discharge to a convalescent depot, those requiring (and fit for) passage to England, and those fit for evacuation to a more distant base, such as Rouen.

In many respects the medical service of the present campaign differs widely from any previous experiences; perhaps one of the most marked and important evolutionary developments is to be found in the employment of the ubiquitous motor car, which will probably be found to have exercised an enormous influence on field medical organization (as well as on the strategic and tactical problems involved). A motor ambulance convoy consists of 50 ambulances, together with a repair van, two or three supply lorries, two motorcycles, and a car for the officer commanding. The staff consists of a major, Royal Army Medical Corps, in command, with 3 officers, R. A. M. C., a quartermaster, 3 motor transport officers (Army Service Corps), and a driver and orderly for each ambulance. Each convoy is responsible for evacuating the sick and wounded of two divisions, from the front to the clearing hospital, and thence to the ambulance trains. An immense number of motor cars and motor ambulances are in use, and, by their means, in a country well provided with magnificent roads, such as France, the problem of rapid removal of wounded from the front to suitable hospitals of a more or less permanent character has been much simplified. It is said that 70 percent of the field ambulance transport now consists of motor vehicles. The accompanying illustration shows a parade of these cars at their rendezvous at Grove Park, in the southeastern suburbs of London. As already mentioned, what were formerly known as Clearing Hospitals are now called Casualty Clearing Stations. They are mobile units that move as the army moves. (It cannot be said that mobility has been a marked feature of the present campaign so far.) To these points are brought the wounded from the front by means of motor ambulance transport, generally arriving in the early part of the day. The cases are examined and classified; first aid dressings may be renewed, fractures and other serious injuries are examined, immediate operation cases detained, and the remainder (about 70 or 80 percent of each convoy) transferred to the hospital train, and so to the base with the utmost expedition.

What has been described as "a complete hospital on wheels" is the latest development of railway accommodation for the wounded, as exemplified by the Princess Christian Hospital Train, constructed by the Birmingham Railway Carriage Co., from the design of Mr. William J. Fieldhouse. According to the requirements of the war office it accommodates 400 patients, either lying down or sitting up; 174 of these are provided with cots, disposed in four carriages or wards of 36 beds each, and one of 30; the remaining 226 patients are able to sit up. In the brake van are separate wards for infectious cases, if required. The cars are loaded from the ends, and unloaded from doors in the center. They are heated by steam, the temperature being capable of regulation for each car separately. Sleeping accommodation is provided for the staff, including medical officers, nurses, cooks and 23 orderlies. A well-arranged kitchen, surgery, office, store room, etc., make up a train complete in every detail according to our present experience. The lighting is by both gas and electricity. A Retired Army Officer.

## KANSAS CITY ENJOYS HOSPITAL BUILDING BOOM

### Missouri City's Facilities for the Care of the Sick Being Almost Doubled

New hospitals now contemplated or in course of construction in Kansas City, Mo., will, when completed, represent an expenditure of more than three million dollars and practically double the hospital bed capacity of the city.

These are some of the improvements actually being made or which will be started soon:

| | |
|---|---|
| Christian Church Hospital, initial building, nearly completed | $200,000 |
| East Side Hospital, new building | 15,000 |
| German Hospital, additions soon to be authorized. | 250,000 |
| City General Hospital, bonds voted for enlargement | 125,000 |
| Mercy Hospital, more than $100,000 raised in a campaign to secure a building fund of | 200,000 |
| Polyclinic Hospital, new building | 25,000 |
| St. Joseph's Hospital, new building under construction | 500,000 |
| St. Mary's Hospital, addition started | 60,000 |
| South Side Hospital, enlarged | 45,000 |
| City Tuberculosis Hospital, new building almost completed | 150,000 |
| Wesley Hospital, new building under construction. | 100,000 |

In addition to these undertakings several small private hospitals are being built, and a $100,000 memorial home for aged persons is to be erected by the George H. Nettleton Home Association.

The Christian Church Hospital, of which the first unit is nearing completion, is designed ultimately to embrace a group of buildings costing a million dollars.

The newest project is that of the recently incorporated Southwest School of Medicine and Hospital (homeopathic), which proposes to expend a million dollars in the erection of buildings, beginning next year.

St. Luke's Hospital, under Episcopal auspices, increased its capacity last year from 25 beds to 50 beds, but is said to be already looking forward to further extensions.

# PHILANTHROPY AND THE PUBLIC HEALTH

THE NEW YORK ASSOCIATION FOR IMPROVING THE CONDITION OF THE POOR.
BAILEY B. BURRITT, General Director.
WILLIAM H. MATTHEWS, Director,
*Department of Family Welfare.*
DONALD B. ARMSTRONG, M. D., Director.
*Department of Social Welfare.*

## THE HOSPITAL PERISCOPE

### Social Service for Contagious Disease Cases—An Inquiry Into 150 Cases Discharged After Communicable Diseases

BY HOLLAND HUDSON

Many persons in hospital work think of the hospital social service worker as a rather over-sentimental Lady Bountiful, dispensing groceries and good advice to the needy patient without much reference to the medical and surgical status of the case. She is much more than that now in any modern hospital: she is the human periscope by which the hospital can direct both its course and that of its patients to mutual advantage.

This article is less to acclaim the virtues of social service than to illustrate, by example, what may be seen through the periscope and thereafter remedied by the hand and the voice of social service. Last winter the New York Association for Improving the Condition of the Poor made a study of 150 cases discharged from the Willard Parker hospital, with the cooperation of the Department of Health. The study was made by Dr. Caroline E. Rosenberg, of the Bureau of Hospitals, and directed by Dr. Donald B. Armstrong, of the A. I. C. P. Post-hospital examination was made of measles, scarlet fever and diphtheria, fifty patients to each disease. Only discharged patients under fifteen years of age were visited. The important findings were these:

That 53 percent were ill after discharge;

That 83 percent had some pathological condition;

That the general condition of 31.3 percent was below normal;

That 88.6 percent of the mothers were in need of medical instruction.

The figures in detail are:

MEDICAL HISTORY SINCE DISCHARGE*

| | Measles | Scarlet | Diphtheria | Average |
|---|---|---|---|---|
| Children's condition since discharge as reported by mothers— | | | | |
| Well | 46% | 50% | 44% | 46.6% |
| Ill | 54% | 50% | 56% | 53.3% |
| Excoriation of nose with bloody discharge | 2% | 4% | 6% | 4 % |
| Ear discharge or painful | 2% | 8% | 2% | 4 % |
| Coughed | 20% | 4% | 12% | 12 % |
| Pneumonia | 4% | .... | 4% | 2.6% |
| Intestinal | 10% | 6% | 2% | 6 % |
| Coryza | ... | 4% | 2% | 2 % |
| Diphtheria | 6% | 6% | 2% | 4.6% |
| Measles | ... | 2% | .... | .6% |
| Scarlet | ... | .... | 2% | .6% |
| Paralysis | 4% | .... | 12% | 5.3% |
| Skin lesions | ... | .... | .... | 1.6% |

*The medical history was obtained from the mother of the child. She was closely questioned as to symptoms and signs. Diagnosis had sometimes been previously made by a physician.

PATHOLOGICAL FINDINGS UPON PHYSICAL EXAMINATION

| | Measles | Scarlet | Diphtheria | Percent of Total |
|---|---|---|---|---|
| Children who had pathological condition | 78% | 90% | 82% | 83 % |
| Ears affected | 2% | 8% | .... | ..... |
| Bronchitis | 20% | 8% | 12% | 13.3% |
| Glands—anterior cervical | 20% | 18% | 18% | 18.6% |
| Tonsils | 62% | 68% | 72% | 67 % |
| Intestines | 10% | 6% | 30% | 15.3% |
| Paralysis | 4% | .... | 12% | ..... |
| Excoriation of nostrils* | 2% | 4% | 6% | 4 % |
| Heart (murmurs) | ... | 8% | .... | ..... |
| Kidney—albumin | ... | 20% (4% with casts) | | ..... |
| General physical condition below par. | 38% | 26% | 30% | 31.3% |
| Children who had no pathological condition | 22% | 10% | 18% | 17 % |

*Cultures negative.

PROBABLE CARRIERS AND RETURN CASES

| | Measles | Scarlet | Diphtheria |
|---|---|---|---|
| I. Developed after discharge within incubation period— | | | |
| Measles | ... | 2% | 4% |
| Scarlet | 4% | ... | 2% |
| II. Probable carriers of diphtheria infection from hospital developed diphtheria between discharge and investigator's visit. | 6% | 2% | 2% |
| III. Probably transmitted to other child— | | | |
| Measles | 12% | ... | ... |
| Scarlet | 4% | 8% | 2% |
| Diphtheria | 4% | ... | 20% |
| IV. Apparently contracted disease from home-treated patient in same building | 8% | 2% | 10% |
| V. Investigator suspected tuberculosis in home | 4% | 6% | 14% |

These are dangerous figures. From them a hasty propagandist with more zeal than knowledge of his facts might compose an "exposé" of Willard Parker Hospital and its staff. It seemed wise to the investigators, however, to go further, to try to get back of the results to contributory causes. Dr. Rosenberg found most of the patients in the same environment in which the disease was engendered, necessitating their removal to Willard Parker Hospital. More than 88 percent of the families were in need of continued medical and hygienic instruction, and in 24 percent of them other children than the patient needed medical attention. The environmental data and need of instruction have been tabulated as follows:

ENVIRONMENT

| | Measles | Scarlet | Diphtheria | Total |
|---|---|---|---|---|
| Number of rooms in majority of homes | 3 | 3 | 3 | 3 |
| Average number of persons in an apartment | 5.8 | 6 | 6.9 | 6.2 |
| Apartments with 8 persons or more | 8 | 9 | 18 | 35 |
| Apartments with 7 persons or more | 17 | 14 | 28 | 59 |
| Building condition of apartment— | | | | |
| Good | 16 | 10 | 15 | 26.6 |
| Fair | 21 | 31 | 23 | 50 |
| Bad | 13 | 9 | 12 | 22.6 |
| Cleanliness of home— | | | | |
| Good | 23 | 24 | 25 | 48 |
| Fair | 22 | 19 | 21 | 42 |
| Bad | 5 | 7 | 4 | 10 |

INSTRUCTIONS

| | Measles | Scarlet | Diphtheria | Percent of Total |
|---|---|---|---|---|
| Number parents receiving medical instruction | 86% | 96% | 84% | 88 % |
| Homes where other members of family besides discharged needed medical instruction | 14% | 24% | 34% | 24 % |
| Those needing instruction in diet | 18% | 8% | 10% | 12 % |
| Advice for cleanliness and general hygiene needed | 20% | 14% | 12% | 15.3% |
| No advice or instruction needed | 16% | 2% | 12% | 10 % |

When the report was submitted to the Department of Health, the issue raised was met promptly and squarely. The bad conditions indicated were publicly and frankly acknowledged in the department's weekly bulletin, and a remedy instituted. Lacking sufficient funds for the immediate extension of the social service work, the Division of Communicable Diseases is utilizing its post-graduate training school for nurses to follow up post-hospital cases and make finally secure the work which the staff of the Willard Parker Hospital has in part accomplished.

The report and its sequelæ means two things: another successful demonstration of the need for hospital social service to obtain facts and to aid substantially the work of the hospital; and the endorsement of the hospital periscope for one more kind of hospital—the contagious disease type—by America's most important municipal health agency.

# PREVENTION OF BLINDNESS
# MATERNITY

*Conducted by* CAROLYN CONANT VAN BLARCOM, R. N.,
*Secretary National Committee for the Prevention of Blindness;*
*Chairman Committee on Prevention of Blindness and*
*Midwives National Organization for Public Health*
*Nursing.*

## Trachoma in the United States[1]

BY GORDON L. BERRY,
Field Secretary, National Committee for the Prevention of Blindness.

In a recent issue of THE MODERN HOSPITAL there appeared an article on trachoma in Kentucky, by Dr. James A. Stucky, of Lexington. Doubtless the information regarding the prevalence of this disease in that state came as a surprise and a shock to many to whom the word "trachoma" had previously meant little. But when the actual condition and the extent of its spread throughout the country is evidenced by a small amount of investigation, and we find that trachoma has penetrated not only Kentucky, but is found in large or small degree in many of our maritime and industrial centers, and has become a scourge second only to tuberculosis among the Indians on practically every reservation in this country, then indeed it must be admitted that the control and eradication of this disease is one of the great public health problems of today.

Trachoma is no new disease. Perhaps it is one of the oldest, for we find references to it among the writings of the early Greeks and Egyptians. At first, evidently confined to restricted areas in the Orient, it was carried westward along the great caravan routes until it penetrated Europe, and from there was transferred to American shores through emigration. It can hardly be said that trachoma has become general in its occurrence throughout the United States as yet, but we find it prevalent to large extent in the mountain sections of Arkansas and Missouri, in southern Illinois, in Texas, in Kentucky and contiguous states, and among all the Indians.

Just what is trachoma? The word itself comes from the Greek "trachus," meaning "rough"—hence the origin of the expression which describes its first stage—"granulated eyelids." The disease itself is defined by Dr. John McMullen, Surgeon U. S. Health Service, as an inflammation of the conjunctiva which originates in infection from a trachomatous to a non-trachomatous eye. The germ organism responsible for trachoma has not as yet been discovered, but wherever it secures an initial foothold, we find that unless proper precautions are taken, it is readily communicable through the mediums of the roller towel, the dirty wash basin, the common use of bed linen, clothing, etc. It is essentially a chronic disease, extending over years, sometimes seeming to have entirely disappeared and then breaking out again in more serious attacks, ultimately causing partial or total blindness or serious impairment of vision, unless its ravages have been checked by proper remedial treatment.

Following the primary, inflamed, granular condition, we find some of the most distressing sequelæ, any or all of which may cause great suffering to the patient, and may bring about an almost total reduction of efficiency. The delicate membranes of the eyelids, "burned out," so to speak, by the infection, are replaced by scar tissue, as nature endeavors to eradicate the disease. The formation of this scar tissue may be accompanied by contraction, which brings about an in-turning of the eyelids, a stage technically termed "entropion." The margins of the lids roll inward and the eyelashes, instead of pointing out as normally, beat up and down on the eyeball, causing extreme irritation and frequent corneal complications. In fact, the cornea almost always becomes implicated at some stage of the disease in untreated trachoma. Ulcerations on the surface of the cornea may result in a condition known as "pannus," which consists of the overgrowth of the cornea with a thick and fleshy mass of newly formed blood vessels and tissues, so dense at times as to hide the iris entirely from view. Pannus is nature's attempt to shield the cornea from the layers of trachomatous tissue formed on the lining of the lids. Great sensitiveness to light, subsequent attachment of portions of the conjunctiva to the cornea, and other disastrous complications are frequently found. With tens of thousands suffering from the ravages of trachoma, and in the realization that it is communicable, we can readily understand why it has become one of the most dreaded diseases in those sections where it has already established itself.

Fig. 1. A group of Navajo patients, most of whom are under treatment for trachoma. Many of them have come from a distance of a hundred miles or more to receive treatment. (Courtesy United States Indian Service.)

It is stated on good authority that ninety percent of the population of Egypt is afflicted with trachoma, and that a sound eye in that country is a rarity. History shows what a terrible scourge it may become whenever the opportunity is given it to spread. Within the last century alone thousands of English soldiers were rendered blind by it, and

[1]The following article is a resumé of a much more extensive treatise on trachoma recently prepared by the National Committee for the Prevention of Blindness, 130 East 22nd street, New York City, copies of which may be obtained upon application to the committee.

Fig. 2. Sunshine and fresh air cannot reach the interior of this Indian home. It provides a splendid place for trachoma and other diseases. (Courtesy United States Indian Service.)

the armies of other continental countries suffered frightfully in the same period. It is said that in Belgium one out of every five soldiers was affected with trachoma. In an effort to rid the army of the disease, the fatal procedure was adopted of dismissing the trachomatous soldiers to their homes, thus spreading the infection broadcast through the civil population. In view of the disclosures of possible suffering which may follow in the train of this disease, we should consider its eradication a public responsibility resting upon each one of us.

Just when or how trachoma became implanted in the United States will doubtless never be known, but it is evident that it was brought in from European countries. The records of the immigration department show that it has been found largely among the Syrian, Armenian, Italian, Polish, Lithuanian and Slovak races. Immigration by them has always been heavy, and their people are the ones who are turned back in largest numbers by our immigration inspectors. In 1897 trachoma was listed by the U. S. Public Health and Marine Hospital Service as "dangerous, contagious," and since that time great care has been exercised to exclude any alien infected with the disease. During the past ten years twenty-three thousand have been turned back, their dreams of a golden future in the land of liberty dispelled, while nearly thirty thousand were prevented from embarking on the other side by official or semi-official inspection which demonstrated the presence of trachoma.

Trachoma has spread in the mountain sections of Kentucky to such an extent that it became necessary to ask for Federal assistance to control it. During the past three years the United States Public Health Service therefore has opened three trachoma hospitals in the most seriously infected areas of Kentucky, and two more have been recently opened just over the eastern border of the state in Virginia and West Virginia. The latest survey by the Public Health Service cites thirty-three thousand as the approximate number of trachoma cases in Kentucky.

The situation among the Indians is pathetic and tragic. Of the three hundred and twenty-five thousand American Indians—all that remain—we find twenty percent, or sixty-five thousand, suffering from trachoma. In many of the Indian schools the percentage runs much higher; in one school in Oklahoma, for instance, eighty-eight percent of the pupils being found trachomatous. Soon after this condition was disclosed by surveys recently made, the United States Indian Service took steps to fight the disease, and now through a system of medical inspection, field service, hospital and nursing care, and education in the methods of prevention, it is believed that control of the disease has been secured in that field.

In our industrial centers, especially where great numbers of foreign workmen are herded together, living in unsanitary quarters, poorly ventilated, and with the fundamental principles of hygiene unknown, or unenforced, we frequently find a focus of trachoma infection. Such, for instance, where the conditions which were responsible for the outbreak among the employees of the Youngstown Sheet and Tube Co., Youngstown, Ohio, a year ago. Seventy-six cases of trachoma were found among the five thousand employees, and one hundred and seventy-five more were discovered in their families and among the school children. Here, too, the situation was deemed so serious that the United States Public Health Service was invoked to meet the emergency, and a hospital was established for the exclusive treatment of trachoma. Between February 9, 1914, and August 31 of the same year, 242 cases were treated, requiring 13,183 individual treatments, an average of fifty-five per patient. Almost needless to say, the town is now practically free from trachoma, and the conditions which were responsible for it are completely changed.

Fig. 3. What trachoma does. Mother blind; child, who contracted disease from parent, saved by prompt treatment.

It has been a matter of deep concern for years to discover the best means for the prevention and eradication of trachoma, and a résumé of the methods instituted by the United States Public Health Service will indicate the possibilities of successful eradication for any community which has the problem to solve.

Each of the three government trachoma hospitals in Kentucky has a ward capacity of not less than fifteen persons, and many more than that number are treated daily, an average day showing from sixty to ninety patients having come in for medical aid. The hospital staff includes a surgeon and two nurses, while in the more recently established trachoma hospitals in Virginia and West Virginia an additional visiting nurse has been included. The follow-up work in the homes of discharged patients is as important as the earlier relief extended, as by this means the dangers of reinfection can be explained to the people them-

selves, and unsanitary ways of living corrected. Explanation of these dangers, given in person by surgeon or nurse, accomplishes far more than the distribution of publications on the subject, although these, too, have their place, and have been distributed broadcast through many counties.

It may truly be said that prevention of trachoma is practically synonymous with the education of the public to its dangers, and means of spread, and not until there is improvement of industrial and housing conditions of the poor, not until the present social customs and habits and unhygienic mode of living in the infected communities is raised to a higher standard, can it be wiped out.

Soon after the establishment of the government trachoma hospitals in Kentucky, surveys of the schools or other suspected areas throughout the state were called for

Fig. 4. Entropion in case of long standing trachoma. (Courtesy United States Indian Service.)

in large number. Dr. John McMullen, United States Public Health Service, in charge of the work in Kentucky and the Virginias, has, with his assistants, made these surveys as requested. They have been productive of manifold benefits, as in connection with the examinations there have been established school clinics, where operative or other treatment was provided as needed, thus affording a means of clinical experience to those physicians who have not had previous opportunity to know trachoma at first hand. The diagnosis, methods of operating, medical treatment, etc., are explained and demonstrated in detail, the result being that cases of trachoma which may develop in ensuing months are recognized and promptly dealt with by the local health authorities. Again, the school examinations and clinics wake up the community generally and a large amount of publicity is naturally attendant upon these local surveys, thus giving the health authorities the opportunity to drive home the methods of prevention at the most psychological time.

During the year, cases are exhibited at teachers' institutes, showing various stages of the disease, from recent infection in a young child to the development of the complications hitherto mentioned in old age, totally blind as a result of lack of treatment. In this way the teachers themselves are educated to a realization of the dangers, and they accordingly become more keenly watchful for any symptoms among the children in their classes.

House-to-house visits have been made in great number. The hospitals are located in the best available buildings that can be rented in these small communities and each one is made a model from the standpoint of modern hygiene. It thereby serves as a constant demonstration in itself to all who come for treatment, and for the townspeople and those from surrounding communities.

When applying for treatment the patients are told the nature of the disease, and the necessity for using indi-

Fig. 5. Kentucky school child with trachoma. Five members of her family contracted the disease through her, one case ending in blindness.

vidual toilet articles; they are furnished with clean gauze handkerchiefs, individual towels, bed linen, cups, wash basins, etc. Absolute cleanliness is insisted upon, and a large percentage of the cases treated at the government hospitals have been sent home cured, and as an indication of the value of the educational propaganda, we find but a small percentage returning for further treatment as a result of reinfection.

The government trachoma hospitals have been placed in the needy districts merely as demonstration centers, and

Fig. 6. Everted lids, showing trachoma granules.

there has been no intention of having them kept there beyond the time when the state or locality could carry on the work. It is interesting to note that, owing to the activity of the Kentucky Society for the Prevention of Blindness, Miss Linda Neville, secretary, a plank appears this fall in the platforms of the Republican, Democratic and Progressive parties in Kentucky, pledging the support of each to the work initiated by the government and opening the way to the eventual continuation of the work by the state itself.

It is surprising at what small expense these little hospitals, which do such a large work, are maintained. Approximately six thousand dollars annually covers all ex-

penses for each, so that it may readily be seen that the financial burden is not too heavy for a community of any fairly large population and wealth to add to its budget. And the eventual economic saving to the state is so enormous that the cost of prevention and eradication in dollars and cents is hardly worth the counting. At present eighteen percent of the students enrolled at the Kentucky Institute for the Blind are there as a result of trachoma. The state, therefore, pays approximately $300 per pupil each year for education and maintenance, as against a cost of $30 per pupil in the schools for sighted children. The economic value of prevention is obvious.

If one were to summarize all the instructions as to how to avoid contracting trachoma, we would develop a brief list about as follows:

Keep in good physical condition.
Have large windows in your homes, which will admit plenty of fresh air and sunshine.
Sleep with your windows open, even in winter, and keep the room where you live, or study, well aired.
Do not use the family towel, especially in homes where there are cases of trachoma.
Have your own towel and handkerchief and don't let anyone else use them.
Always make sure that the wash basin is clean before using it.
Do not sleep with a person having sore eyes, nor use bedclothes that have been used by them.
Do not wear the clothing of others, nor use their eating utensils without previous cleaning.
Advise anyone with sore eyes to have them treated at once.

Practically the same recommendations have been made by the surgeons in charge of the Indian situation, and they have further adopted the expedient of printing large posters, which have been tacked in prominent places over the reservations and in the schools for Indian children, calling attention to the dangers from trachoma, and the ways of conveying the infection.

In conclusion, it is evident that trachoma is indeed a menace in our country. As Dr. Clark, of the United States Public Health Service, says, "When the disease arises in a young child he is debarred from the public schools at an age when the mind is most receptive, when the soil is in cultivation for the future harvest of intellectual usefulness. When it occurs in early manhood the door of professional study is practically closed. When defective vision or blindness results he has been prevented from laying up in the storehouse of his mind those mental pictures derived from the study of art, literature and science, among which his imagination could run riot to the solace of his declining years."

Nowhere is the trite saying, "Prevention is better than cure," more applicable than in the case of trachoma. It is highly important that communities where the disease has not as yet obtained a foothold, where to exist it must be imported, should protect themselves against its invasion by proper legislative action and frequent medical inspection.

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The first and central unit of the new Methodist Hospital at Los Angeles, Cal., has been opened. The building cost $170,000 and contains, in addition to a complete operating suite, administration offices, etc., beds for 120 patients. The Methodist Hospital is said to be the only institution of the kind on the Pacific Coast which makes a flat rate to its pay patients. The charge for a room or bed includes everything usually classed by most hospitals as extras. Much charity work is done. One of the main aims of the administration is to eliminate all the objectionable features of institutional care and make the hospital as homelike as possible. Mr. Byron H. Wilson is general manager and Miss Charlotte Armstrong, superintendent.

# DEPARTMENT OF LIFE EXTENSION

Conducted by EUGENE L. FISK, M. D.
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### How to Live

While a major part of the work of the Life Extension Institute consists in the physical examination of individuals—employees, insurance policyholders and others—to whom this preventive and improving service is extended, it is necessary to differentiate clearly the service involved in this health survey from mere mechanical physical examination. The psychology underlying the work must be fully appreciated before the information developed by these examinations can be correctly interpreted and their significance fully grasped.

The Institute's examinations are designed not merely to detect disease, but to assess, as it were, the value of the individual, his potential capacities, as well as his potential longevity.

Where direct medical treatment is needed to remove disability or to increase the efficiency and capacity for right living, the individual is urged to seek such treatment: where he simply needs assistance to a correct philosophy of life, the Institute's educational service and propaganda comes into play.

The principles and motives underlying the work of the Institute have been assembled in its forthcoming book, "How to Live." A few extracts from this book, written in collaboration with the entire hygiene Reference Board of the Institute, may be of interest to those who desire information or inspiration on these matters:

Former President Taft, in his foreword to the book, writes:

"To one who has been an eye-witness of the wonderful achievements of American medical science in the conquest of acute communicable and pestilential diseases in those regions of the earth where they were supposed to be impregnable entrenched, there is the strongest possible appeal in the present rapidly growing movement for the improvement of physical efficiency and the conquest of chronic diseases of the vital organs.

"Through the patient, intelligent and often heroic work of our army medical men, and the staff of the United States Public Health Service, death rates supposedly fixed have been cut in half.

"While it is true that to the public mind there is a more lurid and spectacular menace in such diseases as smallpox, yellow fever and plague, medical men and public health workers are beginning to realize that, with the warfare against such maladies well organized, it is now time to give attention to the heavy loss from lowered physical efficiency and chronic, preventable disease, a loss exceeding in magnitude that sustained from the more widely feared communicable diseases.

"The insidious encroachment of the chronic diseases that sap the vitality of the individual and impair the efficiency of the race is a matter of increasing importance. The mere extension of human life is not only in itself an end to be desired, but the well digested scientific facts presented in this volume clearly show that the most direct and effective means of lengthening human life are at the

same time those that make it more livable and add to its power and capacity for achievement.

"Many years ago Disraeli, keenly alive to influences affecting national prosperity, stated: 'Public health is the foundation on which reposes the happiness of the people and the power of a country. The care of the public health is the first duty of a statesman.' It may well be claimed that the care of individual and family health is the first and most patriotic duty of a citizen.

"These are the considerations that have influenced me to cooperate with the life extension movement, and to commend this volume to the earnest consideration of all who desire authoritative guidance in improving their own physical condition or in making effective the knowledge now available for bringing health and happiness to our people."

The introduction strikes the key-note of the Institute's campaign for better living. The purpose of the Life Extension Institute embraces the extension of human life, not only as to length, but also, if we may so express it, as to breadth and depth. It endeavors to accomplish this purpose in many ways, but especially through individual hygiene.

Thoroughly carried out, individual hygiene implies high ideals of health, strength, endurance, symmetry, and beauty; it enormously increases our capacity to work, to be happy, and to be useful; it develops, not only the body, but the mind and heart; it ennobles the man as a whole.

We in America inherit, through centuries of European tradition, the medieval indifference to the human body, often amounting to contempt. This attitude was a natural outgrowth of the theological doctrine that "the flesh is in league with the devil," and so is the enemy of the soul. In the middle ages saintliness was often associated with sickliness. Artists, in portraying saints, often chose as their models pale and emaciated consumptives.

We are beginning to cut loose from this false tradition and are working toward the establishment of more wholesome ideals. It is probably true, for instance, that the man or the woman who is unhealthy is now handicapped in opportunities for marriage, which may be considered an index to the ideals of society.

A great health movement is sweeping over the entire world. Hygiene has repudiated the outworn doctrine that mortality is fatality and must exact, year after year, a fixed and inevitable sacrifice. It aims instead "to set free human life by applying modern science. A science which has revolutionized every other field of human endeavor is at last revolutionizing the field of health conservation.

The practice of medicine, which for ages has been known as the "healing art," is undergoing a gradual but radical revolution. This is due to the growing realization that "an ounce of prevention is worth a pound of cure." As teachers and writers on hygiene, as trainers for college athletes, as advisers for the welfare department of large industrial plants, and in many other directions, physicians are finding fields for practicing preventive medicine. Even the family physician is in some cases being asked by his patients to keep them well instead of curing them after they have fallen sick.

Furthermore, the preventive methods of modern medicine are being applied by the people themselves, as witness the great vogue today of sleeping out of doors; the popularity, not always deserved, of health foods and drinks; the demand for uncontaminated water supplies, certified milk, inspected meat and pure foods generally; the world-wide movement against alcohol, and the legislation to correct wrong conditions of labor and to safeguard the laborer.

Labor itself, today, is being held in honor, and idleness in dishonor. Ideals are being shifted from those of "leisure" to those of "service." Work was once considered simply a curse of the poor. The real gentleman was supposed to be one who was able to live without it. The king, who set the styles, was envied because he "did not have to work," but had innumerable people to do work for him. His ability to work, his efficiency, his endurance were the last things to which he gave consideration. Today kings, emperors, presidents are trying to find out how they can keep in the fittest condition and accomplish the greatest possible amount of work. Even among society women, some kind of work is now "the thing."

One of the most satisfying tasks for any man or woman today is to take part in this movement toward truer ideals of perfect manhood and womanhood.

There should be a keen sense of enjoyment of all life's activities. As William James once said, simply to live, breathe and move should be a delight. The thoroughly healthy person is full of optimism; "he rejoiceth like a strong man to run a race." We seldom see such overflowing vitality except among children. When middle life is reached, or before, our vital surplus has usually been squandered. Yet it is in this vital surplus that the secret of personal magnetism lies. Vital surplus should not only be safeguarded, but accumulated. It is the balance in the savings bank of life. Our health ideals must not stop at the avoidance of invalidism, but should aim at exuberant and exultant health. They should savor not of valetudinarianism, but of athletic development. Our aim should be, not to see how much strain our strength can stand, but how great we can make that strength. With such an aim we shall, incidentally and naturally, find ourselves accomplishing more work than if we aimed directly at the work itself. Moreover, when such ideals are attained, work instead of turning into drudgery tends to turn into play, and the hue of life seems to turn from dull gray to the bright tints of well-remembered childhood. In short, our health ideals should rise from the mere wish to keep out of a sick bed to an eagerness to become a well-spring of energy. Only then can we realize the intrinsic wholesomeness and beauty of human life.

The details of the Institute's suggestions in "How to Live" are grouped after the following subdivisions or rules:

*I. Air*

1. Ventilate every room you occupy.
2. Wear light, loose and porous clothes.
3. Seek out-of-door occupations and recreations.
4. Sleep out, if you can.
5. Breathe deeply.

*II. Food*

6. Avoid overeating and overweight.
7. Eat sparingly of meats and eggs.
8. Eat some hard, some bulky, some raw foods.
9. Eat slowly.

*III. Poisons*

10. Evacuate thoroughly, regularly and frequently.
11. Stand, sit and walk erect.
12. Do not allow poisons and infections to enter the body.
13. Keep the teeth, gums and tongue clean.

*IV. Activity*

14. Work, play, rest and sleep in moderation.
15. Keep serene.

Upon careful analysis, the rules in "How to Live" are, after all, simple. It is their persistent neglect that is responsible for so much misery and premature death. It is important to arouse the individual to a sense of responsibility in the observance of these rules, and as an extremely important and necessary preliminary—to ascertain his individual need so that the rules may not be blindly followed, but adapted to each particular case.

# SOCIAL HYGIENE
## VENEREAL DISEASES

Conducted by WILLIAM F. SNOW, M. D.,
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### Proofs of Progress

Evidence of steady progress in the administrative control of syphilis and gonorrhea in the United States is contained in the annual reports of many health departments which have been appearing in print since the close of their fiscal years in July. As illustrations, the following extracts are quoted:

THE MASSACHUSETTS STATE DEPARTMENT OF HEALTH

On June 1, 1915, this department announced the establishment of a Wassermann laboratory. Within two months the following statement was published[1]:

"During the period from June 1 to July 24, 1,451 specimens have been examined from twelve of the twenty-eight state institutions and from three private hospitals. At the same time the Wassermann laboratory has been completely equipped and the routine so well established that it is now able to extend its services to private, charitable and municipal hospitals and institutions. In addition to this the State Department of Health is now ready to offer the facilities of the Wassermann laboratory to patients of private physicians.

"The service for patients of private physicians may be obtained through two channels: (1) through district health officers, and (2) through the laboratory directly. It is required in each instance that the patient be sent either to the district health officer or to the Wassermann laboratory directly with a letter from his physician stating the patient's name, residence and occupation. Specimens for examination[2] will be taken at the Wassermann laboratory on Tuesdays and Thursdays, between 3:00 and 5:00 p. m., in Building D, Room 103, of the Harvard Medical School, where the Wassermann laboratory is situated. It will be more convenient for patients living some distance from the Wassermann laboratory to have the specimens for examination taken by the district health officer. The physician should make an appointment with the nearest district health officer and then refer the patient to him with a letter stating the patient's name, residence and occupation. No charge is made for taking the specimens or making the test.

"The importance of the Wassermann test as an aid in the diagnosis of disease is now well recognized, and physicians and institutions are invited to avail themselves of the opportunity to have the Wassermann test made as a routine examination on the blood of their patients and on spinal fluids where the facilities permit. In this way the diagnosis of syphilis may be definitely established in approximately 90 percent of the instances where it exists, and the proper treatment given. Such a procedure should decrease the incidence of those obstinate later manifestations of the disease which affect the heart, the blood vessels, the brain and the spinal cord, the results of which are usually serious and often incurable, or may only be relieved after great suffering and expense to the patient. These late syphilitic manifestations are the most frequent causes of untimely death of otherwise strong and hearty persons.

"Wassermann examinations have an important bearing upon eugenics. The incidence of congenital syphilis with its high infant mortality and a large number of the premature births due to syphilis are preventable if physicians or institutions in charge of pregnant women would have the Wassermann test made on every woman during the first months of pregnancy. Specific treatment could then be given promptly as a curative and preventive measure.

"It is important to have a Wassermann test made on patients in whom tuberculosis or cancer is suspected; in the former event, with the idea of preventing unnecessarily prolonged residence of syphilitics in the state sanatoria, which constitutes an unwarranted financial burden upon the community, and which exposes the syphilitic to infection with tuberculosis, and the tuberculous patient to infection with syphilis. In cases of suspected cancer or other obscure malady it is important to rule out syphilis by one or more Wassermann tests, a plan which is now followed in the large and efficient private and charitable hospitals."

THE NEW YORK CITY DEPARTMENT OF HEALTH

This department, which has been the pioneer in effective work with venereal diseases as a public health problem, has issued[3] a summary of its work for 1914, including a review of the department's progress in this field since April 4, 1911. The point of view of the New York City Board of Health is interesting and of vital importance to the department's success. The principle is laid down that all infectious and preventable diseases and everything pertaining to their diagnosis and supervision properly fall within the scope of its activities. It is maintained that this attitude finds justification in the fact that it is essential for the control of any infectious disease that the diagnosis be made readily accessible to all members of the community. Applied to venereal diseases this means that the greater the number of existing syphilitics and gonorrheics diagnosed, and the more rapidly this is done—thus enabling them to be placed immediately under treatment—the more certain will be the control of the disease. To carry this into effect, the department holds it to be necessary that facilities for diagnosis of all infectious preventable diseases should be provided.

"Accordingly, the Health Department laboratories perform the Wassermann reaction, the complement fixation test for gonorrhea, examine smears for treponema and gonococci and make cultural examinations of urinary sediments and urethral discharges. The tests are made free of any cost. They are made for physicians and medical institutions, only to whom the findings are reported. In order to facilitate the transferring of specimens the diagnostic outfits are distributed to some six hundred stations in drug stores and hospitals scattered throughout the city, from which stations they are daily collected and conveyed to the department laboratory. The extent to which physicians and hospitals have availed themselves of the opportunity may be gauged from the fact that, during 1914, 59,614 specimens were received for examination.

"By far the majority of cases were recorded through the laboratory. More than 75 percent of the specimens were received from private physicians and a large percentage of the positive cases would in all probability not have been reported if this medium did not exist. Not that the profession in our city is any more delinquent than elsewhere, but we do not all as yet subscribe to the view that the venereal diseases are to be dealt with precisely as is any other group of contagious diseases. It is thus seen what an important adjunct the laboratory constitutes in our plan.

"With the view of rendering the physicians all possible aid, there have been established diagnostic clinics, three in number; two in Manhattan and one in Brooklyn, where patients may be sent by their physicians or institutions for the blood-letting operation, smears, etc. The wisdom of this procedure may be judged from the attendance recorded, the number for the year 1914 being 19,297.

"Principally, as an educational factor, an advisory

[1] Public Health Bulletin, State Department of Health, Massachusetts, July, 1915.

[2] Lumbar puncture for spinal fluids is not made by the laboratory or district health officers because this procedure requires the facilities of a hospital or a private house with a trained attendant.

[3] Department of Health, City of New York. Venereal Diseases; Their Administrative Control, by Louis Chargin, M. D., Chief of Division of Venereal Diseases, No. 33, August, 1915.

clinic was established, which acts as a sort of clearing house for venereal diseases. There, free advice is given to applicants regarding the nature of these diseases, the danger of improper treatment is pointed out, the necessity for strict adherence to their physician's orders, the danger of consulting quacks, the importance of abstention while diseased, etc. Educational pamphlets, describing the diseases in simple language, and cards of instruction are issued. These are reproduced at the end of this article. Under no circumstances is treatment of any character undertaken. Cases that require treatment and can not afford the services of a private physician are referred to a number of accredited clinics in various parts of the city. These clinics, in order to be placed upon the approved list, must comply with the stringent requirements of the Genito-Urinary Section of the Associated Out-patients' Clinics of the City of New York. Those who can afford private treatment are referred to their family physicians, or if they have none, they are given a list of the approved clinics and advised to choose one or another of the attending physicians of the clinics.

"During the past six months 1,389 new patients attended our advisory clinic.

"An analysis of the chart shows that the males predominate—less than five percent were female, but this is a palpable improvement over the figure for the preceding six months, when but one percent were of the women. Presumably the female element, because of fear of publicity, reluctantly attend. It is interesting to note that about thirty percent of our applicants were married men, which, however, for the most part give histories of infection antedating their marriage. Of the 1,389 tabulated cases, 479 were either suspected or actual luetics, 572 suspected or actual gonorrheics, 128 suffered from sex neurosis of one type or another, and 210 were other than sex diseases. Twenty percent of our applicants were skilled laborers, as compared to 80 percent unskilled. Of the total number about 50 percent were out of employment for varying periods at time of consulting us. It was found necessary to refer 751 for treatment, *i. e.*, about 54 percent of the total number, and of these 486 were referred to clinics, the large majority of these being out of work or earning such small salaries as to make it a hardship to consult private physicians. An attempt was made to elicit as carefully as possible the probable source of infection, dividing this into public, clandestine and otherwise. Under the last we include such as were transmitted in wedlock, those accidentally infected and those of congenital origin. Of the 803 listed, 578, *i. e.*, *circa* 70 percent, obtained their infection through the public prostitute; 205, *i. e.*, 25½ percent clandestinely, and 20, or 2½ percent, fell under the third group.

"Part of our educational campaign consists in combating quackery. This is one of the most difficult problems with which we have to contend. Their victims are many, usually foreigners (with a heavy admixture of apparently intelligent Americans) whom they find easy dupes. What could not be said regarding the methods of this unscrupulous class! Two possible means of attack present themselves. One is to legislate them out of existence. There exists a law which empowers the regents to revoke the license of practitioners found guilty of fraud, deceit, etc., But how difficult it is to prove fraud! The board of aldermen have passed a bill making persons whose assertions represent untruths, etc., liable to a fine. An attempt is being made to test it out. The second means of attack is to divert prospective victims from these quacks. The recognized medium through which the quacks are enabled to ply their nefarious trade is publicity. This takes the form of alluring advertisements in the public press, the posting of similarly worded signs in the toilets of saloons and exhibitions in privately controlled anatomical museums. Our problem would be solved if certain of our newspaper owners were public spirited enough (the revenue from the source is considerably in excess of $100,000) to refuse these ads. This, as a matter of fact, has occurred in Chicago, where, in consequence of an investigation undertaken by the *Tribune*, a crusade was launched exposing their methods, with the happy result that there is no longer any quack problem in the western metropolis.

"On the principle that publicity could best be counteracted with publicity, the department has had inserted in some of the newspapers that accept the quack notices a four-line advertisement, which reads:

"'Free advice regarding venereal diseases can be obtained at the Department of Health, No. 149 Center street, Room 207, from 9:00 a. m. to 12 m., daily, Sundays and holidays excepted. Consultation strictly confidential.'

"Insignificant as this ad is in size, it is gratifying to note that it is yielding encouraging results. During the first six months of 1915, of a total of 1,389 applicants to the Advisory Clinic, 316 came in response to the ad. Another means which is proving of inestimable value is the posting of venereal disease signs in suitable locations, such as toilets, bulletin boards of railroad stations, terminals, factories, etc. These signs read:

"VENEREAL DISEASES
Confidential advice
regarding
Gonorrhea, Syphilis
and
Sex Diseases
Can be obtained at Room 207,
The Department of Health,
149 Center Street,
9:00 a. m. to 12:00 m., daily,
Sundays and holidays excepted.
— Avoid —
Advertising Specialists and
Patent Medicines.

"During the same six months' period 446 individuals consulted us through this sign. Of the total number of applicants, 233 had consulted one or more quacks.

"No system of control can be complete without ample hospital and dispensary facilities for the treatment of indigent infectious cases. Although we must not lose sight of the fact that those with infectious lesions are properly hospital cases, the venereal diseases are essentially well adapted to dispensary treatment. This somewhat simplifies the problem."

### THE VERMONT STATE BOARD OF HEALTH

The following "Act for the Prevention of Venereal Diseases" became effective as a state law in June, 1915:

"Section 1. A person who, knowing himself to be infected with gonorrhea or syphilis, marries shall be fined not more than five hundred dollars or imprisoned in the house of correction for not more than two years.

"Sec. 2. A person who, while infected with gonorrhea or syphilis, has sexual intercourse shall be fined not more than five hundred dollars or imprisoned in the house of correction for not more than one year.

"Sec. 3. A physician who knows or has reason to believe that a person whom he treats or prescribes for is infected with either gonorrhea or syphilis shall immediately report the name, address, age and sex of such person to the secretary of the State Board of Health, for which report he shall receive the sum of twenty-five cents, to be paid by the State Board of Health. A physician who fails to make such report shall be fined not more than two hundred dollars.

"Sec. 4. The State Board of Health shall make and enforce such rules and regulations for the quarantining and treatment of cases of gonorrhea and syphilis reported to it as may be deemed necessary for the protection of the public. Said board shall not disclose the names or addresses of such persons reported or treated to any person other than a prosecuting officer or in court on prosecutions under this act.

"Sec. 5. During the months of January and of July of each year said State Board of Health shall pay to physicians all sums due for reports made under the provisions of this act.

"Sec. 6. The sum of one thousand dollars is annually appropriated for carrying out the provisions of this act.

"Sec. 7. Section 2 of No. 218 of the Acts of 1912 is hereby repealed."

The Vermont State Board of Health has issued no report as yet upon its experience in enforcing this law, but has established a laboratory service for the diagnosis of syphilis and gonococcus infections and has provided for the reporting of cases and the correspondence in relation thereto.

# QUERIES AND ANSWERS

### Recipe for Whey

To the Editor of THE MODERN HOSPITAL:

Can you give us a recipe for making whey for infant feeding, as it should be made, and is ordinary whey, obtained by straining "clabbered" milk, the right kind?

A CHILDREN'S NURSE.

The following is a very simple recipe for making milk whey, prescribed by the doctors in certain intestinal diseases of children:

Add to 1 pint of fresh lukewarm (98° F.) milk 1 teaspoonful of liquid rennet. Allow milk to stand in warm place until firmly coagulated. When the curd has formed, beat up with a fork and allow it to stand for some moments until the curds have shrunk considerably; strain off whey through cheese-cloth or silk; then heat whey to a temperature of 150° F., thus destroying further action of rennet.

You may use ordinary "clabber" milk for the same purpose, but you had better heat to 150° F. as above after straining, as there is as much bacterial action in the naturally formed "clabber" as in that artificially made.

### Stain for Laboratory Woodwork

To the Editor of THE MODERN HOSPITAL:

Somewhere I saw a recipe for staining or painting the table and bench tops in the laboratory so that chemicals would not discolor them. Can THE MODERN HOSPITAL give the recipe and tell us whether it is all right to use it?

A LABORATORY DIENER.

The stain for laboratory benches and counters that you saw was made up after the following formula:

FIVE SOLUTIONS

(a) Potassium chlorate ..... 10 gm.
Copper sulphate ..... 10 gm.
Water .....1,000 c. c.

Apply two coats of the hot solution. Allow first to dry before applying the second. Allow to dry and wash with water.

(b) Anilin hydrochlorid ..... 12 gm.
Water .....1,000 c. c.
Apply one coat. Allow to dry.
(c) Potassium chlorate, 10 percent in water.
Apply one coat. Allow to dry.
(d) Hydrochloric acid, 5 percent in water.
Apply one coat. Allow to dry and wash with water.
(e) Linseed oil.
Iron in with hot iron.

### Sterilizing Water for Surgical Purposes

To the Editor of THE MODERN HOSPITAL:

A question has come up with us as to the proper method to pursue when sterilizing water for surgical purposes. It seems that some doctors claim that if water is boiled at 212° F. for a few minutes it is sufficiently sterilized for all surgical work. Others claim that water must be heated with steam under pressure (15 to 20 pounds) to be sterile. Which is correct? If merely boiling water a short time will destroy all the germs and spores, what good are the very expensive water sterilizers?

Dr. James W. Jobling, Professor of Pathology, Vanderbilt University Medical School, replies to this question as follows:

"I think the question of the sterilization of water for surgical purposes has been definitely settled. All water used for this purpose should be sterilized under pressure, as the spores of tetanus bacilli and of other similar organisms are not killed by boiling unless it is done three days in succession, and then it should be boiled for a period of forty-five minutes or more each day. Of course tetanus spores are not found in every specimen of water, but we have no practical method of determining when they are or are not present. I should consider the surgeon using boiled water for surgical purposes criminally negligent, except, of course, in an emergency. I understand the question refers to water used in hospital operating rooms."

### Bacteria and the Milk Supply

To the Editor of THE MODERN HOSPITAL:

We contract in the city, from a distributing company, for our milk supply, and are supposed to get milk of low bacterial count. Our doctors are dissatisfied with our milk, especially on the children's service, although the city laboratory reports a bacterial count as low as 10,000.

Can THE MODERN HOSPITAL give us a hint as to where the trouble lies? It has been suggested that perhaps the milk company's pasteurizing is faulty.

A CITY HOSPITAL.

Bacterial count has nothing to do with milk that has been pasteurized; every microorganism may have been destroyed in the process of pasteurization and yet the milk be deadly for sick children. That is the whole trouble about pasteurization; by killing the bacteria it can destroy all the evidence of bad milk; that is, milk that has been kept for thirty-six or forty-eight hours and that may have five or ten million bacteria per c. c., and that is then well pasteurized, may not show a single bacillus and yet be rank poison by reason of the toxins it contains, and they are not rendered harmless by the pasteurizing process, and they are not to be seen under the microscope.

Your trouble probably is that your milk is too old when it is pasteurized, or it may be possible that there is an infection in the herd somewhere; not very long ago a cow with a streptococcic abscess of the udder, and milked with the other cows, infected a large area of one of the great cities of the country; this cow's milk was added to that of several hundred other cows and the infection could be traced over a large area by the number of people who got streptococcic sore throats.

You had better have your milk very carefully analyzed, not only for the number of lactic acid bacteria, but for streptococcus and colon and other harmful forms. The freshness of the milk can be ascertained by making the acid test; bacterial ferments are coincident with the acid character of the milk.

### The Cost of a Dispensary

To the Editor of THE MODERN HOSPITAL:

We are being urged to open a dispensary in connection with our hospital, and while we feel that it would be a good thing for the community to have a dispensary, our finances are so limited that we are afraid of the expense.

Our city has a population of 12,000, and our 100-bed hospital is the only institution for acute cases; we are obliged to do a good deal of charity work for which neither the city nor county will pay.

About how much would it cost to run a dispensary, and what would the effect be on the hospital? A TRUSTEE.

It is impossible to tell what a dispensary would cost you without knowing how you expected to conduct it; it can cost you a great deal, or nothing at all; but there are compensations in the conduct of a dispensary that under conditions such as you outline in your hospital should make the dispensary a negligible quantity in the matter of expense. For instance, you say you are compelled to do a good deal of charity work for which the city and county

will not pay. This being the case, it will be desirable for you to get these patients out of the hospital at the earliest possible moment and have them return to the dispensary or out-patient department for convalescent treatment, dressings and the like. In this way you will be shortening the stay in the hospital of your charity patients and therefore cut down the amount of money their keep in the hospital would cost, or you can do a far larger amount of work, some of which would be remunerative.

Most dispensaries are now charging a small fee for their services to those who can pay even a few cents; in some dispensaries this charge is ten cents, in others twenty-five, and there is no doubt that the latter amount would cover reasonable dispensary operations.

If, as you say, your hospital is the only one in your 12,000 community doing acute disease work, you certainly ought to have a dispensary and an out-patient service; you will be doing so much more for your community in the conduct of a dispensary and out-patient service that it is inconceivable that the community will not appreciate what its hospital is doing and be willing to pay for it—at least your own supporters will pay for it if the city and county will not, and it will not be very long after such service is instituted before the city and county both will be compelled to pay their share by the force of public opinion.

You might begin in a small way; send your operative cases and your convalescents home a little sooner than you have been doing, and let them come back for dressings and treatment and for observation. Such dressings will not cost any more than if you were using them on the same patients in the hospital itself, nor will the medicine you give to convalescents amount to any more than you would have to give if the patients were still in the hospital, and you will not be at the expense of their food and other attentions. By all means make a start in this way.

## Nurses as Anesthetists

To the Editor of THE MODERN HOSPITAL:

Some of our doctors are urging us to put in graduate nurses for anesthetists instead of the interns; others think nurses, without medical training, cannot become competent anesthetists. We know the intern service is not satisfactory, and many of the men are very poor anesthetists. What is the compromise? I doubt whether we could afford a sufficient number of graduate nurse anesthetists to give all the anesthetics, unless we could find other work for them when the operating rooms were not working.

A SURGICAL NURSE.

Some of the best surgeons in the country are using graduate nurses specially trained as anesthetists; but the special training that these young women must undergo gives them nearly all that the intern has, and the experience and practice besides. There is no question that the deftness and the quick perception of a highly trained woman will fit her to size up nearly every situation during the course of an anesthetic, and with every anesthetic she gives her experience broadens, and she soon comes to be quite efficient and able to meet any contingency as well as the best medical man, to say nothing of the poorly trained intern.

It seems to us that the fact that she is a nurse has nothing to do with the ability and efficiency of an anesthetist; it is a question of careful training and attention to business, and there is no doubt that a well trained woman, serving at the work year in and year out, becomes a far better anesthetist than the average intern, considering his short service, can possibly be.

The great trouble has been that few hospitals can afford to employ graduate nurses as anesthetists because the working hours are so short, and there is nothing else for them to do at other times, so that their services become expensive. If the arrangement of work in the hospital can make it possible for one or two, or any sufficient number of graduate nurses to be employed during the morning in giving anesthetics, and otherwise during the rest of the day, such an arrangement ought to be most effective. The intern, of course, is doing something else before and after the operating hours and his time is fully taken up—besides, he is not paid a salary.

## Efficiency of Formaldehyde Fumigation

To the Editor of THE MODERN HOSPITAL:

We fumigate our mattresses, blankets and pillows by putting into a small room and burning formaldehyde and permanganate of potash in the room. The mixture is 1 pound of 40-percent formaline to 8 ounces of permanganate, and the space in the fumigation room is about 6 by 7 feet, and 7 feet high. The things are left in for 12 hours. Is this fumigation effective?

A PHARMACIST.

Your formula for formaldehyde fumigation is that usually practised and is efficient where any formaldehyde fumigation will serve the purpose. You do not say whether your mattresses are cotton felt or curled hair, the latter being very much easier to fumigate because of the open character of the hair and the ease of penetration. But in any event it is altogether probable that you are not sterilizing your fabrics by the method you employ. In the first place, you say nothing about the temperature of your chamber, nor is there any reference to the humidity. If your humidity is very high, almost to the point of saturation, and if the temperature is well up, your fumigation will be likely to be more effective. The degree of humidity is particularly important.

Major E. L. Munson, Medical Corps, United States Army, several months ago made some careful studies of fumigation, and his results were published in the November, 1913, number of THE MODERN HOSPITAL, page 179. His fumigation was accomplished in small, tight rubber or paper bags, and it seems he was able to destroy vermin in soldiers' clothing and also harmful microorganisms.

But we have almost come to the opinion, at least for hospital purposes, that fumigation is impracticable except where the goods can be placed under artificial pressure, as for instance, in a regular disinfector, using a combination of high pressure steam and formaldehyde. The only safe way for you to sterilize your mattresses and pillows effectively is to place them in a disinfector, as above indicated. If you have a hot air tumbler in your laundry you can soak your pillows in a formaldehyde or phenol solution; then put them through your washers in the regular way, to get out the smell and dirt, and then put them through the hot air tumbler. This will bring the feathers back to their original fluffiness.

Your blankets should be soaked in a 3-percent phenol solution over night and then sent to the laundry, where they will be washed in warm water in the regular way.

If you cannot buy a disinfector, which costs about $1,000 for the smallest size, you had better take your hair out of the ticking, put it through a steam chamber, wash the ticking separately, as an infected fabric, and make it up again. You cannot sterilize felt mattresses in this way and had better destroy them when they become infected.

## Shall Small Hospitals Teach?

To the Editor of THE MODERN HOSPITAL:

We have a general hospital of 100 beds in a city where there is a good university medical school; we have no connection, either with the university or the medical school attached to it; but our doctors think we should let the medical school hold clinics in the hospital and use the patients for teaching purposes.

What does THE MODERN HOSPITAL think about this, and

will such an arrangement be likely to expose the hospital to a reputation in the community for experimenting on patients? One or two of our trustees are a little in doubt about the desirability of such a connection.

AN R. N. SUPERINTENDENT.

Your trustees should have no misgivings in the matter of the advantages to be derived by the hospital from connection with a good medical school; there is no possibility that the community will accuse your hospital of using your patients for experimental purposes because the faculty members use them for clinical material. As a matter of fact, patients appreciate quite well the advantages to be gained by them from careful study at the hands of men who are good enough to be on medical school faculties; if the patients do not know this at first they very soon learn that where they are used as clinical material, more study is given to their cases, more care is exercised, both by visiting physicians and interns, and more work is done to make correct diagnosis of their diseases, and in their treatment.

Nor should there be the slightest friction between the school and the hospital; the hospital has its administrative functions to perform; it has its finances to look after and its discipline and order to maintain; and these things should have no concern for medical men in charge of patients. These medical men will want, and they have a right to expect, that their orders will be followed concerning the professional care of patients, and it will be the duty of the hospital to see that their orders are carried out.

Sometimes the teachers in the schools will ask for things that the hospital cannot afford, but they will nearly always be guided in their orders by the hospital's financial limitations, and the spirit of team work should result in a most happy and desirable connection.

### Competence of Frozen Section Work

To the Editor of THE MODERN HOSPITAL:

Our laboratory doctor and the surgeons are asking for a frozen section outfit to be located in the operating suite, so that tissue can be examined during the operation in cases of doubtful malignancy; not long ago I heard one of the editors of THE MODERN HOSPITAL say that frozen section work ought not to be done, as its findings often gave a feeling of security in regard to diagnosis not borne out by the facts as later developed on deeper and more careful sectioning.

Does THE MODERN HOSPITAL feel that frozen section work ought not to be done and can our surgeons be convinced of that fact? A. B., OHIO.

Perhaps the particular editor of THE MODERN HOSPITAL to whom you refer did not make himself quite plain, although there is a great deal of truth in the statement which you understood him to make.

Thoroughly efficient laboratory directors, especially in large hospitals, do not like to do frozen section work; they claim that their findings must always be based on superficial investigation—that is, they take a piece of tissue, make a few sections at some particular part of it and put this under the microscope. They are never able, in this hurried way, to go through the whole tissue that has been removed, making sections here and there and analyzing them critically; therefore, it can easily happen, and it has very frequently happened, that the particular sections of tissue they happened to examine showed a perfectly harmless, as the surgeons call it, benign growth; whereas if they went deeper they would and often do find malignant areas. In the case of frozen section work, the patient is on the table under the anesthetic and the operation waits while the investigation goes on; it must, therefore, be very hurried in character. The purpose of the frozen section is to help the surgeon in making his diagnosis so that he may know whether the operation he has already done is sufficient, or whether, as in the case of a mammary tumor, he should go into the axilla and dissect out glands that are probably involved. If the inquiry is superficial and it happens that the pathologist does not find malignancy under the microscope, the surgeon is likely to terminate his operation and feel satisfied that he has removed all necessary tissue. Some good pathologists think that good surgeons, if they were depending on their own gross evaluation of the case, would come nearer judging correctly than if they gave credence to the frozen section findings.

On the other hand, some of the best surgeons in the country practice frozen section work and have a small equipment under the direction of a good pathologist present while they are operating, especially in cases where they know the diagnosis is in doubt.

It seems to us that this is rather a case for individual preference and judgment on the part of your surgeons, and if they feel that they can benefit by such an equipment as they are demanding, and if you have a pathologist in whom they have confidence you had better give them the equipment, as it does not cost a great deal; probably $50 will give you as complete an outfit as you will need; the balance of the equipment is in the ability of the men in charge.

### The Privilege of Giving

The Children's Hospital of Philadelphia is making a campaign to raise half a million dollars for other units of their new hospital group. With other literature, they have sent out recently the following card, which is worthy of a wide circulation:

Imagine a rose that would say to itself: "I cannot afford to give away all my beauty and sweetness; I must keep it for myself. I will roll up my petals and withhold my fragrance."

But, behold, the moment the rose tries to store up its colors and treasures of fragrance, to withhold them from others, they vanish. The colors and fragrance do not exist in the unopened bud. It is only when the rose begins to open itself, to give out its sweetness, its life, to others that its beauty and fragrance are developed.

So human selfishness defeats its own ends. He who refuses to give himself for others, who closes the petals of his charity and withholds the fragrance of his sympathy and love, finds that he loses the very thing that he tries to keep. The springs of his manhood dry up. His finer nature becomes atrophied. He grows deaf to the cries of help from his fellowmen. Tears that never are shed for others' woes sour to stinging acids in his own heart.

Refuse to open your purse, and soon you cannot open your sympathy. Refuse to give, and soon you will cease to enjoy that which you have. Refuse to love, and you lose the power to love and be loved. Withhold your affections, and you become a moral paralytic. But the moment you open wider the door of your life and, like the rose, send out without stint your fragrance and beauty, you let the sunshine of life into your own soul.

### Prosecutions Under Sherley Amendment of Food and Drug Act

The United States Department of Agriculture announces more than fifty successful prosecutions under this amendment, prohibiting false and fraudulent claims as to curative or therapeutic effects of drugs or medicines, and officials of the department are firmly convinced that the most drastic measures are necessary to eliminate the evils of the patent medicine traffic.

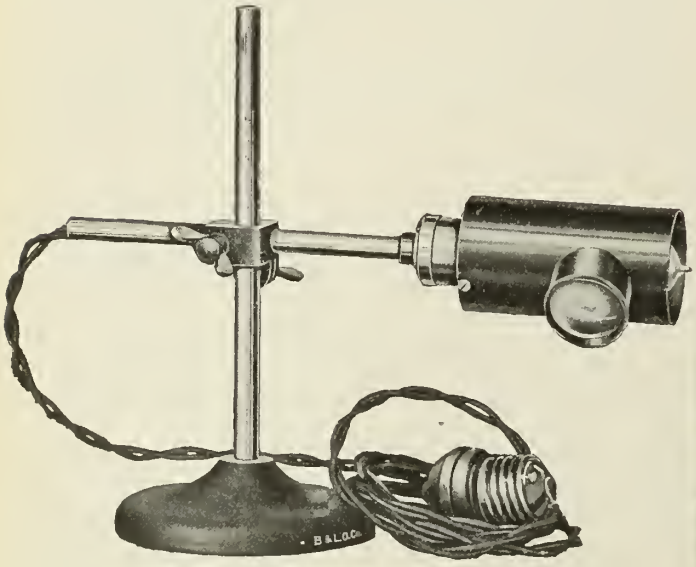
# NEW INSTRUMENTS AND APPLIANCES

VINCENZ MUELLER, Technical Editor.
GEO. W. WALLERICH, Associate Editor.

### A New Microscope Lamp

A microscope lamp should be as small and compact as possible; the light source should have the requisite intensity to cover adequately the entire range of work, not excepting oil immersion; the adjustments should be most simple and should permit of the lamp being used with or without the mirror, and also above the stage for the illumination of opaque objects.

The designers of the lamp illustrated here, the Bausch & Lomb Optical Co., claim that the new model fulfils all of these conditions. The illuminant is a 15-watt Mazda lamp, enclosed in a cylindrical metal shade. Current can be drawn from any convenient lamp socket on a 110-volt



Bausch & Lomb new microscope lamp.

circuit, direct or alternating, without the use of rheostat or transformer.

A special feature of this new lamp is the daylight filter. The filter is one which the makers have designed to give the clear, white illumination of natural daylight, when used with the Mazda lamp on this outfit. The color rendering is so true and the consequent quality of the image so excellent that it is scarcely possible to distinguish between this illumination and natural daylight, even with the most trying specimens. Not only is this device of value in bringing out the true color values, but it also improves the definition, as is markedly noted in the case of red stains, which are very poorly rendered by artificial light. The flask containing the filter acts as a spherical condensing lens. It is securely mounted in a metal collar, which is readily removed for the substitution of a regular condensing lens, if desired. If the filter evaporates after long use, it is easily replenished, the ingredients being found in any laboratory or apothecary's shop.

### A Convenient Window Guard

Hospitals have been looking for years for a window guard that would secure patients, and at the same time not give the institution the appearance of a barred prison. All sorts of devices have been employed, some of them unsightly, some bunglesome to handle, and some insecure.

Fig. 1. The Security window guard.

The "Security" guard is offered by the Security Window Guard Company, of Chicago, as a practical answer to the hospital people who have been looking for something of the kind. The illustrations show the mechanism better than any description. It is a metal barred sash fastened to the inside of the window, is self-adjusting when the window is raised, and can be instantly shifted for washing

Fig. 2. Security window guard in use at Children's Memorial Hospital, Chicago.

the window. The windows themselves can be moved up or down, one or both sashes, without in any degree disturbing the guard.

It is made in any size, to fit the windows, shows hardly at all from the outside, and it is quite as well adapted for the windows of a sanatorium, a psychopathic or men-

tal hospital, where it is desired to control adults, or a children's institution. The illustration, Fig. 2, shows the device in use in a ward of the Children's Memorial Hospital, Chicago. The other illustration shows the guard more in detail.

One of the desirable features of this guard is that it can be adjusted to any window or moved from one window to another in a moment and without having to call an expert mechanic.

### The Megan Apparatus for Disinfection and Fumigation

Authorities on disinfection are practically unanimous in their opinion that the scientifically efficient disinfectant for general use should be a gaseous one, for the reason that mechanical disinfection, such as spraying, washing, etc., cannot be reliably accomplished. For this reason health boards, hospital managers and the medical profession in general are always interested in any new device or apparatus which promises to be an improvement over the methods in use at the present time.

Fig. 1. The Megan disinfector and fumigator.

The American Laboratories Co., of Kansas City, has recently put on the market an equipment called the Megan apparatus, by means of which may be generated at the same time a combination of the following gases:

Hydrocyanic acid (HCN).

Formaldehyde gas (HCHO).

Sulphur gas ($SO_2$).

The inventors are ready to guarantee fully that the formula used in their apparatus will liberate 100 percent of formaldehyde in the form of effective gas, create a strong concentration of hydrocyanic acid and sulphur gas and so neutralize the latter that its injurious effect on linen, cotton, color, metals, etc. (such as is produced when burning), is absolutely nil.

It is generally known that such a combination of gases is destructive to all animal life, is a very effective germicide and also produces good results in destroying non-spore-bearing bacteria.

The construction of the apparatus is fully illustrated in Fig. 2. It is a self-contained, fume-tight gas generator, divided into two compartments, in the lower one of which is a specially designed motor-driven air pump. In the upper compartment is located a lead-lined aluminum receptacle for the fluid element of the formula and an aluminum charging chamber for the powder element.

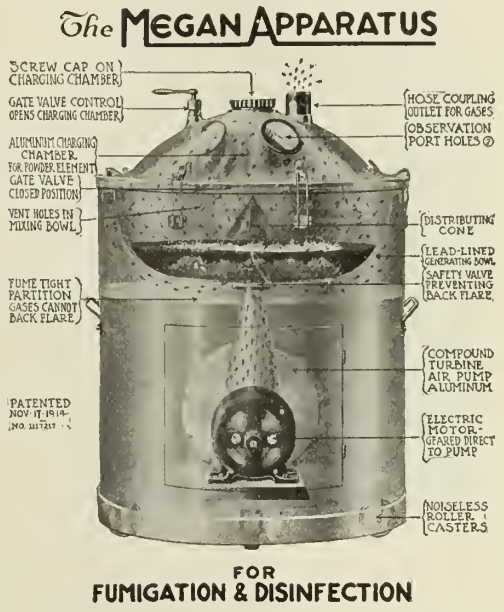

The MEGAN APPARATUS
SCREW CAP ON CHARGING CHAMBER
GATE VALVE CONTROL OPENS CHARGING CHAMBER
ALUMINUM CHARGING CHAMBER FOR POWDER ELEMENT
GATE VALVE CLOSED POSITION
VENT HOLES IN MIXING BOWL
FUME TIGHT PARTITION GASES CANNOT BACK FLARE
PATENTED NOV. 17 1914 NO. 1117217
HOSE COUPLING OUTLET FOR GASES
OBSERVATION PORT HOLES
DISTRIBUTING CONE
LEAD-LINED GENERATING BOWL
SAFETY VALVE PREVENTING BACK FLARE
COMPOUND TURBINE AIR PUMP ALUMINUM
ELECTRIC MOTOR-GEARED DIRECT TO PUMP
NOISELESS ROLLER CASTERS
FOR
FUMIGATION & DISINFECTION

Fig. 2. Construction of the Megan apparatus.

The combination of superheated gases is generated outside the premises and is applied under pressure through a 3-inch hose, in order to secure the maximum saturation of atmosphere, penetration, as well as sub-surface disinfection. After administration in killing doses, the gases are again exhausted, if so desired, by simply reversing the action of the pump.

From the point of view of economy the manufacturers claim that their apparatus is the cheapest means of accomplishing thorough disinfection. The chemical cost per one thousand feet with the Megan apparatus and formula is said not to exceed fifty cents, and where considerable work is done, such as in large institutions or by boards of health, the cost is considerably less.

### The Gastro-Intestinal Timer

Roentgen examination is now considered a necessary part of the routine in diagnosis of gastro-intestinal conditions. Both surgeon and internist place much dependence in the x-ray laboratory findings.

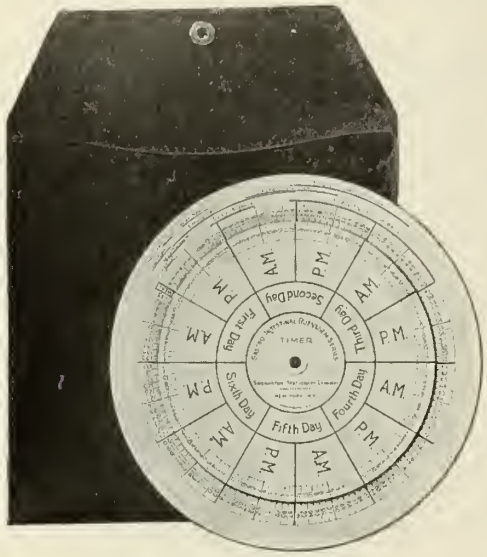
To follow the test meal given at certain points in the tract has at times been difficult, especially in large hospitals where a large number of cases are examined daily. Neither the roentgenologist nor surgeon can well be expected to know just at what time after the bismuth meal is given it may best be seen at a given point, as it works its way through the intestines.

The gastro-intestinal timer illustrated here has been devised for the purpose of giving all necessary data at a glance. It consists of heavy celluloid disks, mounted together by means of a swivel.

In determining the periods at which a series becomes

due the word "meal" is set opposite the hour (first day) of the administration of the test meal. The elapsed time in hours will then be found opposite any selected time the operator may desire; or the time on the successive days will be found opposite any series of elapsed hours the operator may select.

The average "normal motilities" will be found in the margin of the outer circle, compiled from the examination




Gastro-intestinal timer.

of several hundred cases, together with the published reports of cases by some of the principal operators.

It will readily be seen that a complete record can be quickly and accurately made for use in the x-ray laboratory when the bismuth is given, and instructions given for the return of the patient at the right hour if further examinations are required. The timer, it seems, should be of immense value to both roentgenologist and surgeon.

### Self-Retaining Retractor

Designed by DR. U. C. BATES, Seattle, Wash.

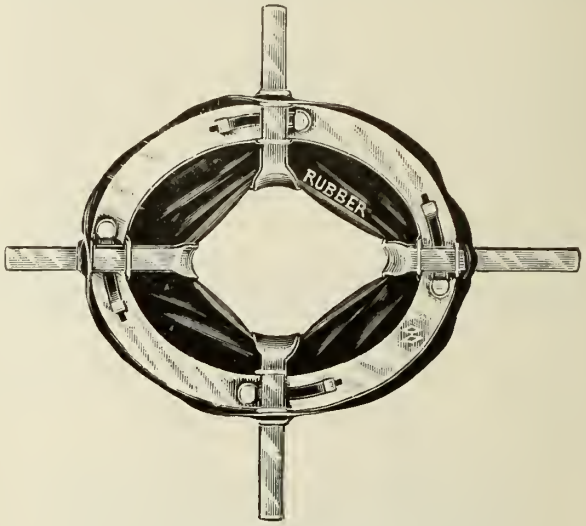
Several novel features are incorporated in this retractor, and some of these will appeal strongly to those surgeons who are doing considerable abdominal work.

The instrument consists of an oval frame about 8 inches wide and 9 inches long. Four retractor blades are fitted to this in such a way that they will slide easily through slots in the frame and be held in any degree of retraction by means of a simple ratchet device, and may be released by pressing a button on each blade. A funnel-shaped piece of rubber, especially moulded for the purpose, is slipped over the shafts of the blades on the outside. This retains itself and fully covers the portion of the blades inserted in the incision; the walls of the abdomen are fully covered by the rubber and completely protected against septic matter from within and without.

Any desired degree of retraction may be obtained, thereby exposing a large quadrant of the operative field with but a comparatively small incision.

Dr. Bates states that in doing intestinal work or gastroenterostomy clamps are not needed, as the proximal and distal portions of the gut can be packed off tightly enough to prevent the escape of contents, and the parts thus being held rigid, suturing is greatly facilitated.

As the rubber stretches from one blade to another it makes traction over the whole circumference of the wound, thus preventing traumatism by the blades and oozing from the wound surface.




Bates abdominal retractor.

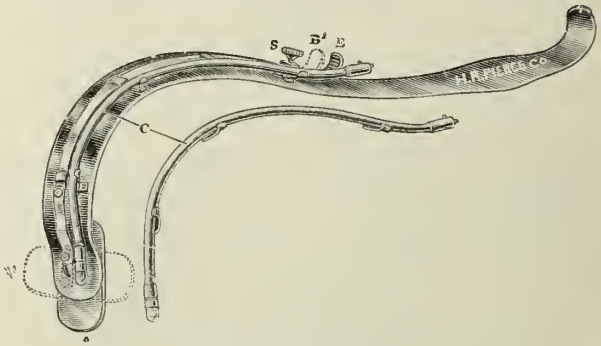
The retractor is sterilized with the rubber funnel in place, so no handling is necessary after it is taken from the sterilizer.

### Bladder Retractor with Electric Light Attachment

Designed by DR. B. A. THOMAS, Philadelphia

This new retractor has several good features not found in other retractors of this type presented to the profession for use in bladder work.

The instrument may be introduced through a small incision, and when inserted the cross-blade can readily be




Thomas bladder retractor

swung in position at right angles to the main shaft of the retractor.

A powerful electric bulb is attached to a light carrier, which reaches down to the end of the retractor and illuminates the field, so the operator can inspect the base of the bladder, including the urethral orifice. The light attachment may be easily removed for the purpose of sterilization.

Four hospitals in Philadelphia are claiming a bequest of $18,000 made by the will of the late James F. Hope to any hospital in the city that would establish a ward to be known as the "Hope Memorial Ward" for the treatment of contagious diseases. Last June the Orphans' Court awarded the money to the Philadelphia Hospital for Contagious Diseases. At a rehearing claims were put in by the Episcopal Hospital, the Children's Homeopathic Hospital and St. Timothy's Hospital.

# AMERICAN HOSPITAL ASSOCIATION

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Dr. R. W. Bruce Smith, Inspector of Hospitals and Charities for Ontario, Toronto, Ont.

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Dr. R. R. Ross, superintendent Buffalo General Hospital, Buffalo, N. Y.
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Dr. J. O. Skinner, superintendent Columbia Hospital, Washington, D. C.

*Committee to Memorialize Congress to Place Hospital Instruments on the Free List*

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Dr. Thomas Howell, superintendent New York Hospital, New York City.
Dr. J. N. E. Brown, superintendent Henry Ford Hospital, Detroit, Mich.
Dr. W. L. Babcock, superintendent Grace Hospital, Detroit, Mich.
Dr. J. O. Skinner, superintendent Columbia Hospital, Washington, D. C.

*Committee on Local Arrangements and Commercial Exhibit*

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Mr. Daniel D. Test, superintendent Pennsylvania Hospital, Philadelphia, Pa.
Mr. F. F. Leiper, superintendent P. E. Church Hospital, Philadelphia, Pa.
Miss Anna K. Sutton, superintendent of nurses Phipps Institute, Philadelphia, Pa.
Dr. H. K. Mohler, superintendent Jefferson College Hospital, Philadelphia, Pa.
Dr. H. F. Page, superintendent German Hospital, Philadelphia, Pa.
Dr. Wilmer Krusen, medical director Charity Hospital, Philadelphia, Pa.
Miss Marion Smith, superintendent Hospital of the University of Pennsylvania, Philadelphia, Pa.

The Louisiana State Nurses' Association has already begun to make arrangements for the entertainment of the delegates and other members of the American Nurses' Association when the latter organization holds its annual convention in New Orleans in April, 1916. It is planned to make the occasion one that will long be remembered pleasantly by the visiting nurses.

Architect Frank J. Helmle, of Brooklyn, has been engaged to draw plans for a new building for the Knickerbocker Hospital of New York City, which that institution proposes to erect on Convent avenue, between 130th and 131st streets, Manhattan. Accommodations for 150 patients are to be provided. The Knickerbocker Hospital was formerly the J. Hood Wright Hospital.

# THE HOSPITAL KITCHEN

Any questions regarding equipment or other matters connected with the kitchen and dependent departments of food storage and service will be answered in this department. Address communications to The Modern Hospital, Kitchen Department, Metropolitan Building, St. Louis.

### Chopping Machines

In every large sized kitchen such as in hospitals of over 100 beds there is always a large amount of chopping to be done, which should be done by a chopping machine.

The term "chopper" has been applied to what are really grinding machines, an endless screw pushing the material to be ground through knives. The result is not the same as if the material is chopped in a chopping bowl by hand, and these grinding machines are not applicable to all the chopping to be done in the kitchen.

The real chopping machine is composed of a metal bowl in which rapidly revolving knives actually chop the material without crushing it or expelling the juices.

In such a machine, which is power-driven, raw and cooked meats, vegetables, parsley, mint, onions, crackers, nuts, clams, spinach, in fact, everything which can be chopped, can be rapidly prepared. The degree of fineness is regulated by the number of minutes the machine is run, so that any degree of fineness of chopped material can be produced.

These machines are absolutely sanitary and easily cleaned. They are in general use all over the country and are considered among the greatest time-savers in use in the kitchen.

### Fish Storage

Fish cannot be put in the refrigerator without its penetrating odor permeating the other articles stored therein. The odor will even stay in the icebox for days and is difficult to eliminate. Consequently, it is necessary to have some other method of caring for fish when it is necessary to keep it over a day or so. For keeping a comparatively small quantity of fish such as would be necessary in the average hospital, the best method will be found in the following plan:

Take a well-constructed wooden box lined with metal so that it will be water-tight. Before using, the box should be scalded out, to insure its absolute cleanliness. Cover the bottom with a thick layer of finely chopped ice, then pack in a layer of fish, backs down. Then pack additional layers of fish and ice, the top layer of fish being laid with backs up. Cover the top with a thick layer of crushed ice and close the lid tightly. Wrap the box up in some heavy material when full.

Fish thus packed will keep fresh for several days.

Health Commissioner Goldwater, of New York, plans to extend to barkeepers, candy dealers, delicatessen employees, and possibly to soda water dispensers, the regulation requiring food handlers in hotels and restaurants to have a certificate of freedom from communicable diseases.

## BOOKS FOR THE HOSPITAL LIBRARY

### Institution Libraries League Offers a List of New Publications for Profit and Entertainment

BY E. KATHLEEN JONES.
Librarian McLean Hospital, Waverley, Mass.

[The announcement in the August number of THE MODERN HOSPITAL that a league of institution libraries was to be formed brought a prompt response from all parts of the United States, and from Canada as well.

As the first demand of the league members has been for lists of desirable books of recent publication, the committee takes pleasure in calling attention to Miss Jones' selections from current literature, which will appear from time to time in THE MODERN HOSPITAL.

The committee wishes also to mention the syllabus prepared for it by Miss Jones, Librarian at McLean Hospital, Waverley, Mass., entitled "Books and Reading: Outline of a Course of Lectures to Nurses in Hospitals," which is published in the October number of the American Journal of Insanity. Reprints of this may be obtained from Miss Jones or from Miss Miriam E. Carey, State Board of Control, St. Paul, Minn.]

It has been suggested by members of the League that it might be helpful to have a list of approved new books printed from time to time in this column. Such a list would supplement (with the exception of the two years intervening) the little pamphlet entitled, *A Thousand Books for the Hospital Library*, published in 1913. In accordance with this suggestion, the following titles have been selected from the accession book of McLean Hospital in the order in which the books were purchased, with no attempt at classification. As all these books can be bought from local book shops, it has not been thought necessary to quote publisher or price. These are some of the best books published between January and June, 1915. Next month the list will be brought to date.

Julian Street's *Abroad at Home* is a delightful description of some of the principal cities of this country. Braithwaite's *Anthology of Magazine Verse of 1914*, as its name implies, is a collection of the best poems of the year. Williams's *The Yosemite and Its High Sierras*, is a charming picture book, companion to *The Mountain That Was "God"* and *Guardians of the Columbia*. Cramb's *Germany and England* needs no introduction. About *Mrs. Martin's Man* (by St. John Ervine), opinions differ; it is a strong bit of character painting of the Irish peasant, which some consider sombre, but it is not morbid. Curwood's *God's Country and the Woman* is impossible, but thrilling, and deals with the great woods. *The Lone Star Ranger*, by Zane Grey, is the story of an outlaw—a man's book. *The Turbulent Duchess*, by Percy Brebner, who wrote *The Little Gray Shoe*, is a good story of adventure and romance in the Rhine country in the 17th century.

Oppenheim's *Mr. Grex, of Monte Carlo*, needs no comment, and the account of the Kolb brothers' trip *Through the Grand Canyon* also speaks for itself. Ralph Connor has another Canadian story in *The Patrol of the Sun-Dance Trail*. Anderson's *Study of Modern Painting* is very worth while, as is also Percy Mackaye's book of poems called *The Present Hour*. Mr. Winter's *The Russian Empire* was pronounced by the late Curtis Guild to be the best book yet written on Russia. Margaret Widdemer's *The Rose-Garden Husband* is charming, and Booth Tarkington's *The Turmoil* is probably the best American novel of the year. Bindloss tells a good story of adventure in *The Secret of the Reef*, and *The Ladder*, by Philip Curtis, is above the average novel. Temple Bailey's *Contrary Mary* is charming, and Oliver Onion's *Mushroom Town* unique.

For a clear, unimpassioned account of the diplomatic relations of the different countries of Europe during the last ten years, and some of the causes leading to the present war, Herbert Adams Gibbons' *The New Map of Europe* is one of the best. Bailey's *Gentleman Adventurer* and Pocock's *The Cheerful Blackguard* are two "rattling good stories of adventure," which men like. *Pepper* is another of Holworthy Hall's Harvard stories; *Johnny Appleseed*, by Eleanor Atkinson, whose *Greyfriars Bobby* was so delightful, tells the story of the settlement of Ohio.

Enos Mills gives us another of his interesting outdoor books in *The Rocky Mountain Wonderland*. *Angela's Business* needs no comment. *Pals First*, by Frances Elliott, is a surprise from first to last, and one cannot help enjoying it, even though it does revert to melodrama. In Ada Anderson's *The Rim of the Desert* we have another good Western story, and Mrs. Willsie's *Still Jim* and Knibbs' *Sundown Slim* belong in the same class. *His Official Fiancee*, by Mrs. Oliver Onions, is thoroughly enjoyable; Frances Little's *House of the Misty Star* cannot compare with her *Lady of the Decoration*, but is worth reading for the Japanese setting. Oppenheim's *A Double Traitor* is probably well known.

The Baroness Orczy's *A Bride of the Plains*, while sad, gives a most interesting picture of life in a Hungarian village. *Diantha*, by Juliet Wilbur Tompkins, is impossible, but makes good reading, while in *The Girl at Central*, Geraldine Bonner has written a very clever detective story. Winston Churchill's *A Far Country* is a disappointment; he seems to have lost, in his last three novels, that rare sense of humor which made *Coniston* and *Mr. Crewe's Career* so delicious. *Thankful's Inheritance* is another Cape Cod story, by Joseph Lincoln, of *Mr. Pratt* fame; *The Idyl of Twin Fires*, by Walter Prichard Eaton, is a dainty and charming piece of writing, with a slender, but delicate, love-story running through it.

Mr. Locke is at his best in *Jaffery*, and Mr. Merwin's *The Honey-Bee* is above the average novel in thoughtfulness. With this latter comes M. H. Bradley's *The Splendid Chance*, the best story of the beginning of the war in France which has yet appeared; necessarily sad, but strong and restrained. In Dorothy Canfield's *Hillsboro People* we return to the Vermont hills; these are delightful short stories, typical of New England. *Grocer Greatheart* is a "cast-away-on-a-desert-island" story, with a most surprising ending; a book to chuckle over, written by an Australian named Arthur Adams. Mrs. Bacon has written an interesting though somewhat melodramatic story in *Open Market*. The men like *The Man Who Rocked the Earth*, by Arthur Train and R. W. Wood. This is the last book on the June list.

## FIGHTING TYPHUS IN SERBIA

### Dr. Richard P. Strong Tells an Interesting Story of the Valiant Fight of the American Red Cross

Dr. Richard P. Strong, of Harvard, who has just completed the eradication of typhus fever from Serbia, has at last found a sufficient breathing spell to enable him to tell something about the work he and his associates have been doing. In a recent interview granted to Mr. Henry Wood of the United Press, Dr. Strong tells the full story.

The interview took place in a little third-class railway car, which, fitted out with beds in one part and a shower bath in the other, and with a flat car attached behind for carrying his automobile and another car in front for the members of his immediate staff, has been practically the only home Dr. Strong has known in Serbia.

"The epidemic reached its height in the middle of April, just as the American mission arrived," said Dr. Strong. "New cases then numbered 8,500 daily, but it must be remembered that these were the figures only of the victims who came to the military hospitals. Serbia had not been able even to keep statistics of the victims among the civil population, and so the above figures give, as a matter of

fact, no accurate idea of the extent of the epidemic.

"In fact, few figures of any kind are to be had, but presumably the total deaths from the epidemic have been about 100,000 and the number of victims down with the disease at the time we took charge was very likely of equal magnitude."

Dr. Strong told an interesting story of the work of the mission in general, and of the work in the hospitals he said:

"The next most important phase of the work was our sanitary assault on the military hospitals. These, from the start, had been the most prolific centers for the spreading of the disease. They were at all times congested to the limit with wounded or sick soldiers, whose infested clothing quickly spread the disease to almost every inmate.

"In attacking the hospitals we took with us portable bathtubs and had at our disposition the Austrian prisoners to give the sick and wounded their disinfecting baths. While they were doing this we put their clothing and bedding through the steam process and then wound up by disinfecting the entire building with sulphur and often even whitewashing the walls. Of the 113 military hospitals in Serbia, fully 100 passed through this sanitary regeneration at our hands."

Not one of the mission contracted the disease. Of this Dr. Strong says:

"One of the most happy features of the whole work was the manner in which we ourselves, after the terrible experiences of the Serbian and American Red Cross units, kept free from the disease. Not one of the fifty-four men comprising our mission fell a victim. But, naturally, we had at our disposition all of the latest possible preventives. Every doctor assigned to hard work amongst the victims wore a vermin-proof suit, rubber gloves and adhesive bands above the wrists and ankles."

## THE STATE, THE MOTHER, THE CHILD

### Maternity and Infant Welfare Regarded by Great Medical Journal as Peculiarly Devolving Upon the Government

Students of current social movements cannot fail to observe the strength of the efforts which are now being made to extend state action in all that relates to maternity and infant welfare. To this there are many contributory causes, the most prominent perhaps being the attention which has been evoked by the operation of national insurance to the disabilities entailed on working women by pregnancy. Simultaneously, as a result of the work of public health authorities in connection with notification of births, it has become realized that excessive infant mortality to a very large extent occurs during the first few weeks of life, in circumstances often to be attributed to malnutrition or definite illness of the mother, to inefficient midwifery, or to other remediable conditions. Then, again, education authorities, which now undertake systematic medical examination and treatment of children who have reached school age, have found that the ailments or defects of the children should in many cases have been detected and dealt with before the age of compulsory school attendance was reached, or might have been prevented altogether by suitable advice to the mother or hygienic management of the child at an earlier stage. An extreme instance, for example, is the child coming to school showing the results of congenital syphilis, which need not have developed if syphilis of the mother had been detected in the ante-natal period. Towards meeting the demand thus arising, much is already attempted or done by various official bodies, so far as their functions permit, and as much, or perhaps more, by the large number of semi-official and voluntary associations which in one form or another undertake what is termed "infant-welfare" work, and by charitable institutions and maternity hospitals. But the multiplicity of uncoordinated work by existing authorities and organizations in advising, visiting, inspecting, and treating mothers and infants causes much inconvenience and waste of effort, besides being incomplete in many essential respects.

A movement to obtain a new and better order of things, lately organized by the Women's Cooperative Guild, deserves special attention, as it is typical of much which is being proposed in other quarters. Briefly, it is a proposal for local municipal action, largely at the cost of national funds, to establish maternity centers to supply medical and nursing supervision for pregnant women of the working class, to provide and pay municipal midwives, to support maternity hospitals, and to supervise the health of the child until school attendance begins by a large extension of home visiting, infant consultations, and clinics. It is suggested that as an "endowment of motherhood" the sum of £7 10s. (absorbing the present maternity benefit) should be granted by the state for every child born, the major part of which would be given to the mother in connection with the municipal supervisory system. Social reformers who are individualists, if any such remain, may question the expediency of state action in such directions as these, on the ground that parental responsibility will be further weakened, and may object to opening the door widely to further innovations, such as the municipal nursery and crêche, which would probably follow on a considerable scale. The eugenist also may ask, without much expectation of being satisfied, what steps the state proposes to take to see that the children thus encouraged and adopted are the right material for the next generation, arguing that the more desirable class will be less disposed to supply children for municipal officers to bring up, so that the stock will be recruited from the less efficient. Such arguments, however, usually appear to be pleas for inaction, while the supporters of the movement to which we refer have behind them substantial and practical reasons for requiring something to be done, in which they are unquestionably in accord with the general spirit of the time. In its medical aspects there need be no hesitation in supporting the contention that if national money and organization are made available much invalidism of mothers, and death and disabilities of children can be prevented. The recent trend of medical work, including developments in the education of medical students as to the care and hygiene of infancy tends to increase the efficiency of the service which medical science is already able to render in this direction.—*The Lancet* (*London*).

## A GOOD "NARCOTIC DRUGS" FORM

### St. Vincent Charity Hospital, Cleveland, Presents a Method Popular With the Ohio Hospitals

At a recent organization meeting of the Ohio Hospital Association, at Cedar Point, one of the topics that proved of great interest to those in attendance was the technical administration of the new "Narcotic Drugs" law. A number of those present told of their own methods in carrying out the provision of the law.

One of the methods that made a special appeal to the audience was that in vogue in St. Vincent's Charity Hospital, Cleveland, as outlined by Sister M. Marcelline, superintendent of nurses of St. Vincent's.

In order that "Charity's" system may be known to a wider circle of hospitals, the editor of THE MODERN HOS-

ST. VINCENT'S CHARITY HOSPITAL, CLEVELAND, OHIO

| Date | Ward | Drug | Amount | Suppos. | Hypo. Tablets, gr. ½ | ¼ | ⅙ | ⅛ | | Am't Credited | Date |
|---|---|---|---|---|---|---|---|---|---|---|---|
| May, 1915 ... | A | Morphine... | gr. 38 | ..... | ..... | 100 | 30 | 40 | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Fig. 1. This is a sample copy of Narcotic drug book kept by the pharmacist. She enters amount and strength, etc., each department on a separate page, i. e., Ward A on one page, Ward B on another, Operating Room, Casualty Room, etc. All prescriptions for liquid medicines containing narcotics—the physician writes the prescription on blanks provided for the purpose in the pharmacy, signs name and register number. These prescriptions are kept on file, and at the close of the week are pasted in a scrapbook.

ST. VINCENT'S CHARITY HOSPITAL, CLEVELAND, OHIO

Habit-Forming Drug Sheet

Note.—For every dose of opium or coca leaves in any form, opium, morphine, laudanum, heroin, cocaine, etc.—a full line of this sheet must be filled out. Failure to do so is punishable under the law by fine or imprisonment, or both.

| Date | Hour | Name | Ward | Doctor | Drug | Amount | Administered by Doctor or Nurse |
|---|---|---|---|---|---|---|---|
| 9-16 ..... | 12:00 | M. Greene .... | O. R. | Reg. 1494 Jackson..... | Novocaine, ¼% | dr. I | Dr. Robinson. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Fig. 2. These drug sheets are kept in every department. The order for a dose has to be filled in by the visiting physician or intern. He signs both his name and register number. When the nurse administers the dose she fills in the hour and her name, then makes a note of same on the Bedside Record, so that the visiting physician can see at a glance what his patient has received. We take no standing orders, no p. r. n. orders; each and every order is signed by the visiting physician or intern. When the head nurse needs to renew her supplies of narcotics, she takes her drug sheets to the pharmacist to account for amount used. The pharmacist sees that the amount on the drug sheet totals with the amount in her "Narcotic Book," given on such a date.

PITAL asked Sister Marcelline to prepare a short statement for publication; and this she has done in the above sheet forms, with the notations beneath.

## WEST VIRGINIA ORGANIZES HOSPITAL ASSOCIATION

### Following the Lead of Ohio, the New Organization Will Deal with Problems of the Hospitals of the State

There came at the invitation of Doctor G. C. Schoolfield, of Charleston General Hospital, Charleston, W. Va., about twenty men, owners or executors of hospitals scattered over the state of West Virginia, who, in a meeting held at Hotel Kanawah at Charleston, with two sessions, a morning and an afternoon, on September 21, 1915, perfected the organization and elected officers of a state hospital association, the primary purpose of which is to carry the efficiency and principles of the American Hospital Association to a larger number of superintendents than are at present interested in that work; and, second, discussed the possible solution of strictly West Virginia problems.

In order to make the organization an auxiliary of the national organization, the example of the Ohio State Association, in very closely following the constitution of the American Hospital Association, was adopted with a combination of some of the offices and a simplification of some of the committee work.

The following officers were elected.

President—Dr. G. C. Schoolfield, trustee Charleston General Hospital, Charleston, W. Va.

Secretary-Treasurer—Dr. W. H. St. Clair, superintendent Bluefield Sanitarium, Bluefield, W. Va.

First Vice-President—Dr. B. B. Wheeler, superintendent McKendree Hospital, McKendree, W. Va,

Second Vice-President—Dr. A. K. Kessler, proprietor Kessler Hospital, Huntington, W. Va.

Third Vice-President—Dr. R. E. Vickers, proprietor Mount Hope Hospital, Huntington, W. Va.

Executive Committee—Dr. O. O. Cooper, chairman, superintendent of the Hinton Hospital, Hinton, W. Va.; Dr. G. C. Rogers, superintendent Elkins City Hospital, Elkins, W. Va.; Dr. W. A. McMillan, superintendent McMillan Hospital, Charleston, W. Va.

Committee on Legislation, School for Nurses, Constitution, By-Laws and Rules—Mr. Pliny O. Clark, chairman, superintendent of the Ohio Valley General Hospital, Wheeling, W. Va.; Dr. A. K. Kessler, proprietor Kessler Hospital, Charleston, W. Va.; Dr. E. H. Thompson, superintendent St. Luke's Hospital, Bluefield, W. Va.; Dr. J. E. Coleman, superintendent Beckly Hospital, Beckly, W. Va.; G. A. MacQueen, proprietor Kanawah Valley Hospital, Charleston, W. Va.

The next meeting of the association will be held the day prior to the meeting of the State Medical Association in Wheeling, the second week of May, 1916.

The meeting was a very enthusiastic one, with snappy discussions of several questions of vital interest to the hospitals of the state, and it is hoped that the organization will be able to accomplish a great deal in the efficiency and economy of management of the hospitals of the state.

Parties whose names have not been officially announced have recently purchased three adjoining buildings at 205-7-9 West 70th street, New York City, for the establishment of a radium institute to be conducted along philanthropic lines, after the plan of the London Radium Institute. A number of prominent physicians and wealthy business men are understood to be behind the project. The 70th street buildings will be remodeled to meet the needs of the near future, but the plan contemplates a new hospital later on. It is said that the ultimate plant and equipment will represent an expenditure of $1,000,000. A contract for radium to the value of $120,000 has already been awarded. This, it is believed, will give the institution the largest supply of radium devoted to medical purposes in this country.

## HINTS FOR HOSPITAL SUPERINTENDENTS.

There is no excuse for a hospital—no matter how small, and no matter what its financial limitations are—not to carry out the orders of its doctors. Doctors may be poor business men, and usually are, but also they are usually reasonable and reasoning human beings. The hospital superintendent or head nurse who is content to answer, "We can't do it," or, "We can't get it," to a doctor's order, and let it go at that, will not succeed in pleasing the staff, or giving the best possible service to patients. Generally a doctor will be glad to "make something else do," if he possibly can, and generally also he will have a good suggestion to make as to what that "something else" shall be; but he would like to be consulted about any proposed substitution, and if he can't consent to it, he will usually help find a way to carry out the order as he originally gave it.

Did one ever know a hospital superintendent who was not being worked to death? The trouble is that many superintendents do not know how to get work out of others; they will stop to pick out letters on the typewriter that could be far better done by a ten-dollar-a-week girl. A hospital administrator has no right to waste time that he or she is being paid for as an executive head, in the performance of duties that can be as well or better done by some one drawing a floorman's wages. Learn to delegate work to your heads of departments—and by all means refrain from doing any piece of work that is likely to lower your dignity or make you ridiculous. How would you like, some day, to have your board drop in and find you shelling peas for dinner? And yet, you had better ask yourself whether some of the duties you are performing are not quite as silly.

Before you start to build, plan very carefully to be quite sure you are not straining the conditions under which your new institution is to be operated. Remember it is far easier to get money for the construction of a new hospital than it is to obtain enough to make up deficits year after year. If you build a 200-bed hospital when there are not to be more than 100 patients, your per capita cost must run very high, because the whole building will have to be heated, lighted, cleaned and kept in good repair. It costs about as much to run a 2,000-passenger ship with only 100 passengers aboard as it would if every berth was taken. The overhead expense is there. Better build in sections, a wing or two at a time, and let overcrowding force you to add new wings. But plan for the eventual complete building, so that in making additions no tearing down will have to be done.

Are your surgeons being compelled to use home-sterilized catgut? If they are, you are not giving them a fair chance to do their best work. Home-sterilized catgut is never reliable. The processes of sterilization are not reliable, and even if they were reliable under exacting conditions, these conditions never can be maintained day after day throughout the year, where the work is in the hands of pupil nurses who are constantly rotating. You had better buy your catgut from people who make a life's work of preparing it specially for hospital use. Reliability in sterilization is the chief asset, and the stock in trade that these concerns do business with, and they are not likely to jeopardize their own business by carelessness in the preparation of their product. To buy sterile catgut ready for use will cost more, but it will be cheaper in the end, and it will be protection for your patients, for your doctors and for your hospital.

No matter that the hospital is so small that it has no intern or resident medical officer, and that the technic of admitting patients must be carried out by the superintendent, who is at the same time the burden bearer of the whole establishment, there should be some definite rules by which patients are distributed upstairs.

You can see at least that an acute surgical case or a woman in labor is not placed in a room or ward occupied by a puerperal infection; and you can see that a tuberculosis or typhoid is not placed near a patient whose resistance is so lowered that he will not be able to resist the slightest contact with a communicable infection.

It is very much more important that a patient should not be subject to the risk of infection than it is that a patient who can pay $15.00 a week should not be put with a patient who can pay only $10.00. The latter is an inconvenience, but the former is a crime.

In some highly organized business plants the managers have adopted schemes to secure and hold the interest of employees by installing "suggestion boxes" located at some central point, into which employees may drop a suggestion touching not only on the work in their own particular departments, but concerning anything calculated to better the business in any way. In one such plant there is a "Suggestion Committee," made up of members of the board of directors; at intervals this committee goes through the box, and gives a prize, generally money, for a suggestion of value.

How would it do to instal such a system in the hospital? Instead of money prizes there might be a medal, which the winner would be entitled to wear until a later or better "suggestion" took it away from him. Such a contest should be open to all, from the superintendent to the office boy, and include visiting medical men, interns, nurses, orderlies, janitors, maids and the office and mechanical forces.

Other medals might be offered, for instance, one for efficiency, loyalty and energy, to be awarded at the end of each year, and held during the next year; a good deal of friendly rivalry could be stirred up. Such a prize as this latter should be awarded by a committee made up of heads of departments and the superintendent.

It is as hard to fit coal into a furnace as it is to fit shoes on feet full of corns and bunions. There are so many things to be considered in selecting coal for the hospital firebox; open or closed hearth; much or little draft; long or short stack; tubular or tank boiler; hard water, full of scale possibilities, or a soft pure water; all these have a bearing on the selection of coal. It isn't the coal that contains the greatest number of British Thermal Units that will do the most for your boilers, nor is it the coal that has the highest chemical analysis for energy; it is the coal out of which your particular boilers will get the most heat, as shown by carefully made evaporation tests. Even an evaporation test run of 8 or 24 hours tells only part of the story. The best way to test coal, pending the year's contract, is to burn each sample for two or three days at a time, weighing carefully every pound used, keeping careful account of your steam pressure all the while, and weighing your cinders as they are withdrawn. Given about the same outdoor temperature, while all the samples are being run, and knowing the bottom price per ton of each coal, you will be able to figure pretty accurately what is best for you to buy. Then if you are assured that your contractor can control his supply all the year you have all the evidence at hand upon which to make your contract.

# THE MODERN HOSPITAL

*A Monthly Journal Devoted to the Building, Equipment, and Administration of Hospitals, Sanatoriums, and Allied Institutions, and to their Medical, Surgical, and Nursing Services*

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## THE ST. LOUIS CHILDREN'S HOSPITAL

### A Hospital Group of a Distinctive Character, Which Provides for Contagious and Non-Contagious Cases, and for Teaching and Research


By MAURAN, RUSSELL & CROWELL, Architects; Dr. S. S. GOLDWATER, Hospital Consultant, and Dr. BORDEN SMITH VEEDER, Chief of Staff


BEFORE proceeding to a discussion of the plans of the St. Louis Children's Hospital (including the Martha Parsons Free Hospital), it is necessary to explain that the hospital is part of a cooperative enterprise. The Children's Hospital has no power plant of its own, no kitchen, no nurses' home, no operating rooms suitable for major surgical work, nor any laundry. Economy in the size and the cost of the buildings themselves, as well as in the cost of their operation, has been secured by cooperation with Washington University and Barnes Hospital.

Food supplies for the Children's Hospital are sent over from the kitchen of the Barnes Hospital, in an adjoining building. All adults engaged in the work of the Children's Hospital have their meals in the dining rooms at the Barnes Hospital. Important surgical operations are performed at Barnes, and the telephones of the Children's Hospital are connected with a central switchboard in the Barnes Hospital. The two groups of buildings are connected by a service tunnel.

By cooperation with the medical department of Washington University, the out-patient division of the Children's Hospital is conducted in the out-patient building of Washington University; the nurses of the Children's Hospital live in the Nurses' Home of Washington University; and the university power house furnishes to the Children's Hospital hot water for heating and bathing, live steam for sterilizing, electricity for light, power and heat, and brine for refrigeration and for cooled water.

Washington University, Barnes Hospital and the St. Louis Children's Hospital are three independent corporations, united for mutual advantage. For the service furnished by the other institutions, cost price is paid by the Children's Hospital.

The rather odd and unusual general plan of the Children's Hospital is the outcome of a series of studies, in the course of which an attempt was made to meet the requirements of a given program, within definite limits of space and cost. By agreement there was allotted to the Children's Hospital a section of the large plot which had been secured for the use of the medical department of Washington University and its affiliated hospitals. The space assigned to the Children's Hospital was approximately 90x200 feet, facing Kingshighway on the west, and lying to the north and northwest of the Barnes Hospital group. There is a clear distance of more than 75 feet between the south front of the main ward building of the Children's Hospital and the nearest Barnes building.

The Children's Hospital group consists of three main parts. The main ward building is a U-shaped structure, the typical floor of which shows an open ward and loggias on its south front, subdivided ward space in the west wing, extending to the north along Kingshighway, and an elevator, day-room, clinical laboratory, and dressing room in the corresponding wing in the east. On the two lower floors the east wing does not abruptly terminate at the northerly end, but continues in a corridor, which unites it with the lecture hall, lying midway between the main ward building and the isolated wards.

Fig. 1. St. Louis Children's Hospital, St. Louis. General view of group from Kingshighway, showing public entrance; lecture hall entrance (through porte-cochere) and contagious building at high point of driveway which makes the circuit of the court lying between this group and the Barnes group.

It was desired to accommodate in the main ward building, approximately one hundred patients. A typical ward unit accommodating thirty-five patients was agreed upon as being reasonably economical and as representing possibilities of suitable subdivision. A smaller unit would have involved the needless duplication of expensive equipment. Furthermore, it was considered desirable to adopt a ward unit of such size that there would be no temptation to entrust the ward to the care of a single night nurse. This, we think, is an important consideration in the planning of the ward units of an "acute" hospital. In a ward sheltering the acutely sick, situations are constantly arising which make it essentially dangerous to leave a nurse without help during the long night watch. A whole chapter might be written on this point, but we must pass it by with this brief reference, assuming that its significance will be understood by hospital workers.

Although a thirty-five bed unit was regarded as feasible and desirable, elementary hospital hygiene forbade placing the whole number of patients in a single room; the program required the placing of approximately half of the children in small wards, including one-bed, two-bed and four-bed wards. The hospital is provided with a subdivided receiving ward, where all cases are subjected to detention and observation on admission. But despite all precautions, patients may pass this outpost while in the incubating stage of some contagious disease; hence, the desirability of additional "catch" wards. The small units of the receiving ward represent, therefore, the first stage of treatment and absolute segregation; the small units of the upper wards, the second stage of treatment and partial segregation; and the open wards, the third stage of treatment, without segregation.

The south and west fronts of the buildings were obviously the most attractive. The south front has the advantage in the climatic sense, the west front because of its view of boulevard and park. Along these two fronts the patients' beds are ranged. In the middle of the south front is the open ward; to the right and left of the ward, the loggias. The ward service rooms are strung along the corridor, thus reducing to a minimum the distance between the service rooms and the ward proper. The nurses' station is at the corridor angle, from which point the nurse can visually control the main ward, the adjacent loggias and the side corridor and its adjacent glass-walled rooms.

Passing over, now, to the contagious or isolated ward building, one encounters an entirely different arrangement. The program called for a sufficient number of beds to serve for teaching purposes. In other words, it was desired to make the Children's Hospital serve adequately as a clinic and as a clinical laboratory of pediatrics for Washington University; and this college is one of the very few medical colleges of this country which have assembled in a single group of buildings, conveniently accessible for daily study, both contagious and non-contagious diseases.

Although the three isolated wards are superimposed, a study of the plans will show that the

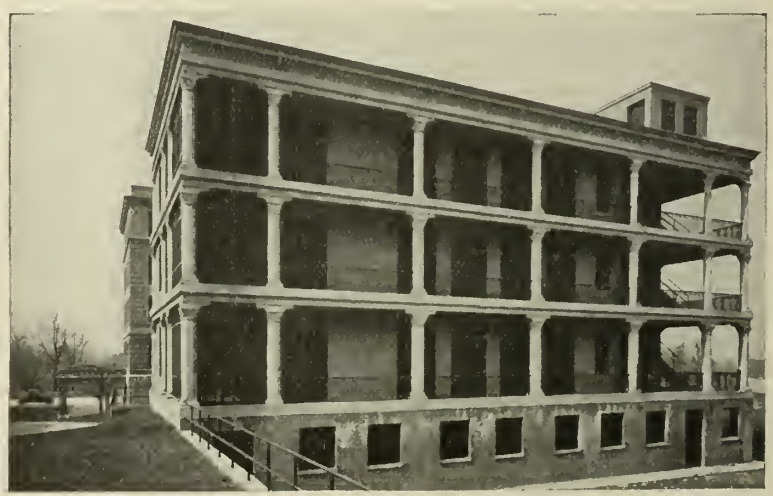

Fig. 2. St. Louis Children's Hospital, St. Louis. Shows more in detail the visitors' porches on the contagious building, as well as the open stairway and elevator shaft.

Fig. 3. St. Louis Children's Hospital, St. Louis. View of the typical corridor separating wards from bath, utility rooms, kitchen, etc. This illustrates the plate glass partition used throughout to separate corridors from wards; showing clock system, as well as loud-speaking doctors' call telephone. A stretcher is shown standing in the corridor; but there is a special stretcher closet.

several floors are quite as separate as if the wards occupied separate pavilions, far removed from each other. There is no indoor shaft connecting one floor with another. The stairway and elevator are built in the open. A fresh air corridor, running east and west, separates the ward unit from a group of sleeping rooms, available for the use of either nurses, mothers or staff, and forming a sort of island unit. South of the fresh-air corridor is the ward unit itself, forming a second island, surrounded by fresh air and subdivided into spaces, every one of which is directly accessible from out-of-doors.

The original scheme was to provide one floor for scarlet fever, a second floor for diphtheria, and a third floor for measles, and a fourth for mixed infections. For reasons of economy the plan was later reduced to three stories only for patients' use. The arrangement and equipment are such that the building lends itself to any imaginable grouping of cases.

The service rooms occupy most of the side of the building which looks toward the main ward building. There would have been no danger in assembling the patients themselves on this side of the building, but the other front was the more open of the two, and furthermore, the mental attitude of patients and visitors in the main building was considered. There can be no question of the conveyance of disease by the atmosphere from one building to another. Nevertheless, it seemed desirable to place the patients where they would not be constantly seen, and by their nearness tend to excite the minds of visitors in the main hospital, who might not be conversant with the scientific theories of communicable diseases.

A study of the veranda arrangement shows that there is an outdoor approach on one side of the building to all of the service rooms, and on the other a visitors' balcony, from which relatives can see the children in the ward without entering the building; on the south front is a patients' loggia. All of these outdoor spaces, as well as the rooms themselves, are screened the entire year.

The buildings will now be discussed floor by floor.

### ELIZABETH J. LIGGETT MEMORIAL AND THE LECTURE HALL

*First Floor.*—At the northern extremity of the west wing is the ambulance entrance, opening into the receiving ward corridor, on either side of which are single rooms separated by partitions consisting largely of glass (Fig. 6). Opening off the corridor of the receiving ward is a side corridor, connecting with the ward service. This interior service corridor on the first floor is open to criticism, because of its lack of direct ventilation. Frankly, it is a compromise. This section of the building was useful for no other purpose, and the location of the service rooms on the upper floors brought many of the pipe lines into this locality, where, for purposes of economy, it was desired to make use of them. While the interior corridor is not directly ventilated the adjoining rooms all have ample outside ventilation, and the actual

Fig. 4. St. Louis Children's Hospital, St. Louis. Baby baths with mixing tank for temperature control.

Fig. 5. St. Louis Children's Hospital, St. Louis. General view of ward, showing ventilating devices in connection with transoms, also showing specially designed ceiling lights made of ordinary graniteware in nickel-plated spreader; also showing one of the porches which flank all wards.

quantity of service in this corridor is comparatively small.

The south front on this floor is devoted to administrative purposes. To the right of the central vestibule is the main office; to the left, the manager's room; at the westerly end of the main corridor is the waiting room, treated as an alcove, so as to light and ventilate the main corridor. Adjoining the waiting room, directly beneath the southwest loggia, is an examining room; beneath the opposite loggia, at the other end of the corridor, is a private office. The elevator faces the corridor at the easterly end. Adjoining is the stairway, treated as a fire stairs, and beyond, in a northerly direction, a social service office, laboratory, toilets for both sexes, and a supply closet.

It is on this floor that the Children's Hospital building connects with the Barnes group; food supplies brought from the central kitchen can be delivered directly to the diet kitchen on this floor, without entering the main hall. Along the corridor which connects the several buildings of the Children's Hospital group there have been placed a drug room, a supply or storage room, a small lecture or demonstration room, a linen room, an autopsy room and an undertaker's room.

The relation of the medical students' lecture room to the connecting corridor is obvious, and needs no explanation here.

The special feature of this lecture room is the complete separation of the means of access of the students, the lecturer and the patient. The students, entering through the south portal, pass between the cloak room, with its lavatory on the left, and the storage room on the right, by means of two stairways flanking the lantern operator's booth, to the tiers of seats arranged with so sharp a slope that an unobstructed view is given from every side of both the screen and the case being demonstrated. Access for the lecturer, on the other hand, together with the private waiting room for the "case," lies adjacent to the main connecting corridor. The lighting fixtures in this room are so designed that from the point of view of the audience they are of typical indirect metal type, but on the sides nearest the lecturer a concealed reflector device is installed, controlled by separate switches.

*Second Floor.*—The features of this floor are the main ward and the adjacent loggias; the west wing, subdivided into six small wards opening into a corridor which has ample natural ventilation; patients' toilet; nurses' toilet; linen closet; cleaners' closet; supply closet; bath room (Fig. 4); utility room; blanket warming closet; diet kitchen; dining room for convalescents, and clinical laboratory.

Attention is directed to the arrangement of the utility room. Its accessibility should be noted. The room is spacious and has two windows. Supply cupboards are close to the open doorway. The working table and the utensil sterilizer are arranged along the side of the room which is visible from the corridor. The sinks and specimen closet are placed along the opposite wall in such a way that the likelihood that odors from these fixtures

Fig. 6. St. Louis Children's Hospital, St. Louis. View looking from the ambulance entrance down the corridor of the receiving end of the building. This shows the glass corridor partitions, as well as the glass separating partitions. It also shows the coved sanitary base, as well as its development into a bed and furniture stop inside the rooms; also shows the knee controlled basins which occur in every room; the legless radiators, and at the far end, the entrance into the examination room.

will be carried into the main corridor is minimized. The diet kitchen is equipped with sink, dish sterilizer, gas stove, plate warmer, tray rack, refrigerator, dumbwaiter and table, and opens both into the ward corridor and into the side corridor, thus facilitating service in both directions.

It is not the main purpose of the Children's Hospital to provide accommodations for private patients. In the earlier plans accommodations for private patients were not included. Later, it was found feasible to add a few private rooms by raising to a height of two stories the corridor running from the main building to the lecture hall, and utilizing the spaces on either side of this corridor for private rooms. Most of these private rooms have, unfortunately, a northerly exposure, preference having been given to the wards. But a visitor who enters the main building can pass directly to the elevator, and, emerging from the elevator on the second floor, can reach the private corridor without going through any part of the main ward.

*Third Floor.*—The third floor of the main ward building differs from the floor below in a few particulars, due to the assignment of this floor to infants. The subdivision of the west wing into single and two-bed rooms was, therefore, not followed on this floor. The main or sixteen-crib ward opens to the outer air on three sides and is connected with the adjacent loggias. Then there is a nursery, one separation room, and two moderate-sized wards. Attention is called to the arrangement of the utility room and bath rooms on this floor. The bath room, containing a slab bath and a long table, where a number of infants can be dressed at the same time, connects directly with the utility room; the latter is, in effect, a "changing" room, and it can be entered directly from both corridors. The specimen closet in this room is of the same type as that used in the other utility rooms. It is a metal cabinet, fastened to the outer wall and venting directly to the outer air through a louvre. The diet kitchen of the typical floor becomes here a milk laboratory. Obviously, infants require no dining room, and the space corresponding to the dining room on the floor below is here utilized for a chilled air room and a warmed air room, separated from each other by a double wall with an intervening air space and insulated from the main corridor by means of a vestibule or air lock. It may be of interest to describe the manner in which these rooms are respectively cooled and warmed.

In the chilled air room the refrigerating coils are encased in a pocket forming the north wall and lined with insulating cork. The source of supply is controlled by a thermostat maintaining a temperature at any point in the room. In a similar way the steam coils are controlled just beneath the under sill. An electric fan is installed adjacent to the refrigerating coils, and the air is thus circulated.

In the warm air room a similar pocket is formed in the south wall. In this case, however, the live-steam coils, which are regulated by ther-

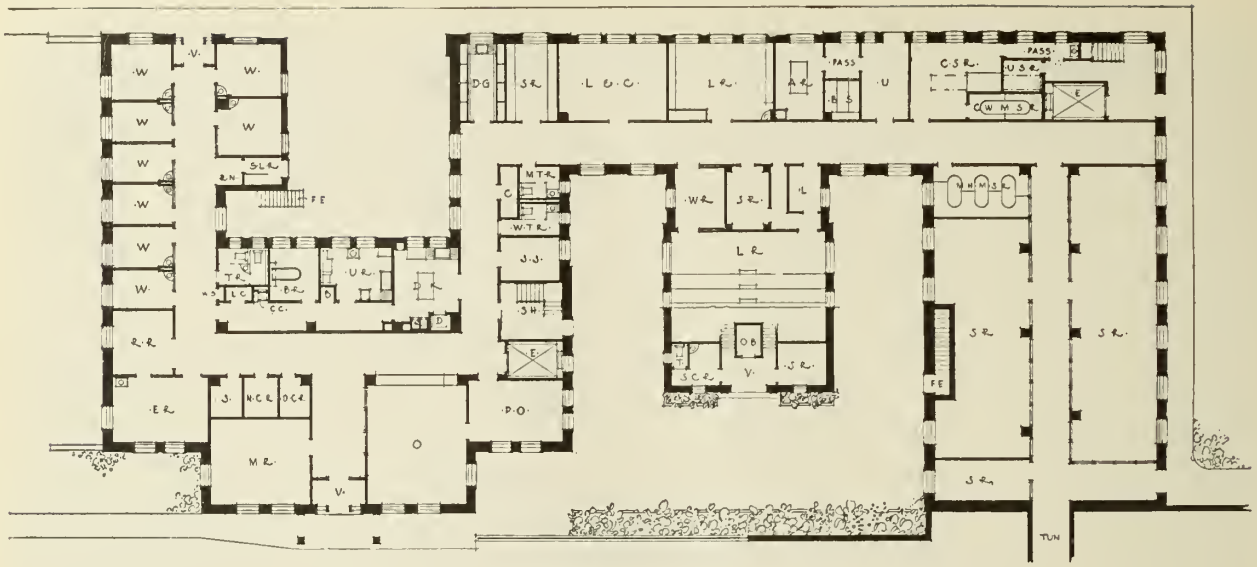

Fig. 7. St. Louis Children's Hospital, St. Louis. Ground floor plan.

mostatic control, maintain a temperature of 90 degrees. In addition a fan and motor are installed at the intersection of the south wall with the exterior wall, forcing outside cool air over the radiation in this room. Access to the various coils, fans, etc., is had by air-tight metal doors.

The corridor of the easterly wing of the building on this floor is a terminal corridor. At its northerly extremity there have been placed a dormitory and a bath room for wet nurses.

Leading from this wing there is an entrance upon the roof of the two-story connecting building, which it is planned to develop into an open-air ward at some future time.

*Fourth Floor.*—The plan of this floor is almost identical with that of the second floor. In the easterly corridor a side ward accommodating four beds takes the place of the day room on the lower floor; and the easterly corridor terminates at its northerly end in a surgical dressing room, equipped especially for plaster work.

*Fifth Floor.*—The general arrangement of the space, plumbing facilities, etc., of the hospital floors below is clearly indicated in the plan of this floor, which provides comprehensively for the accommodation and comfort of the resident physicians and interns, as well as those pursuing special research work. All of the residence portion, together with the library, is completely shut off by means of the corridor door from the directors' office, together with his facilities for examination, the chemical laboratory, private laboratory, bacteriological laboratory with its animal room and the calorimetry room.

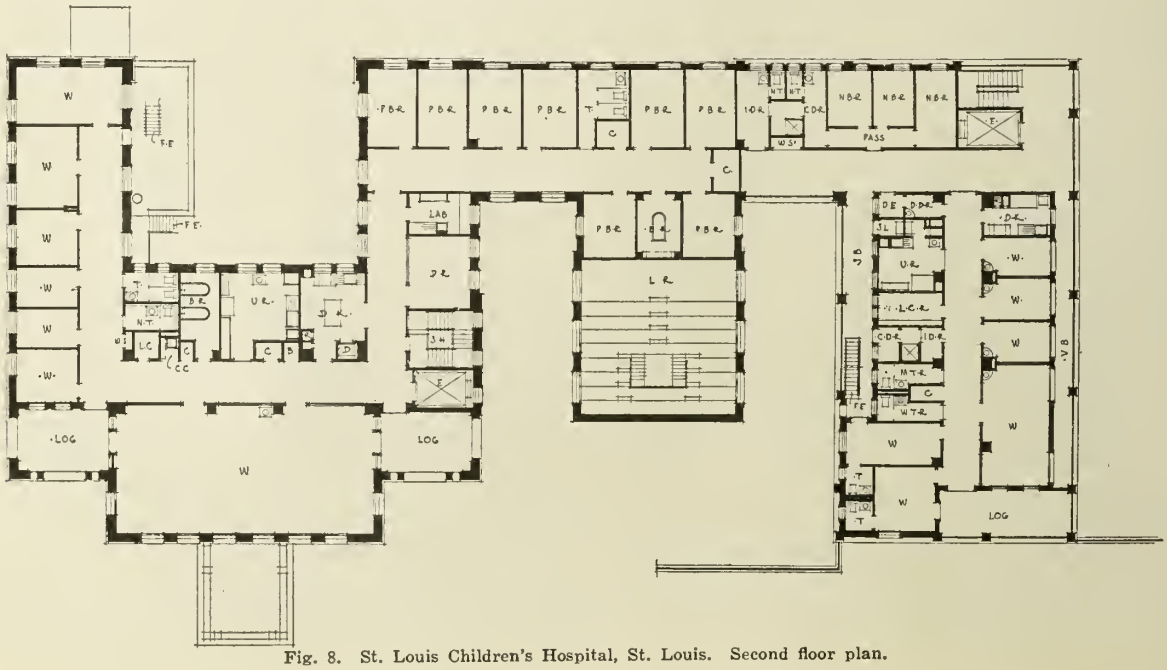

Fig. 8. St. Louis Children's Hospital, St. Louis. Second floor plan.

KEY TO ROOMS.
V. Vestibule.
E. Elevator.
W. Ward.
O. Office.
L. Lecturers' room.
T. Toilet room.
U. Undertaker's room.
C. Closet.
R. Refrigerator.
D. Dumbwaiter.
B. Blanket warmer.
S. Stretcher and supply room.
R-R. Reception room.
M-R. Manager's room.
P-O. Private office.
P-C. Porte-cochere.
E-R. Examining room.
S-R. Storage room.
S-S. Social service room.
E-R. Toilet room.
B-R. Bath room.
U-R. Utility room.
D-K. Diet kitchen.
W-S. Wire shaft.
L-C. Linen closet.
C-C. Cleaners' closet.
DG. Drug room
S-H. Stair hall.
R-N. Receiving nurse.
L-R. Linen room.
A-R. Autopsy room.
B-S. Body storage.
W-R. Waiting room.
L-R. Lecture room.
O-B. Operator's booth.
L-&-C. Linen and classes.
S-C-R. Students' cloak room.
W-T-R. Women's toilet room.
M-T-R. Men's toilet room.
N-C-R. Nurses' cloak room.
D-C-R. Doctors' cloak room.
PASS. Passage.
S-L-R. Soiled linen room.
C-S-R. Clean sterilizer room.
U-S-R. Infected sterilizer room.
C-W-M-S-R. Contagious ward mattress storage room.
M-H-S-R. Main hospital mattress storage room.
P-B-R. Private bed rooms.
LAB. Laboratory.
LOG. Loggia.
I-D-R. Infected dressing room.
C-D-R. Clean dressing room.
N-B-R. Nurses' bed room.
L-C-R. Linen and chart room.
D-E. Doctors' entrance.
D-D-R. Doctors' dressing room.
S-L. Sterilized linens.
V-B. Visitors' balcony.
S-B. Service balcony.
F-E. Fire escape.
W-N-W. Wet nurse ward.
C-A-R. Cold air room.
W-A-R. Warm air room.
M-L. Milk laboratory.
C-W. Cubicle ward.
D-P-&-O-R. Dressing, plaster and operating room.
D-R. Dining room.
INT. Interns.
RES. Residents.
D-O. Director's office.
B-L. Bacteriological laboratory.
P-L. Private laboratory.
C-L. Chemical laboratory.
CAL. Calorimetry.
A. Animal Room.
D-R. Dark room.
BAL. Balance room.
TUN. Tunnel to Barnes surgical ward.
N-T. Nurses' toilet room.
L-&-R-R. Library and recreation room.

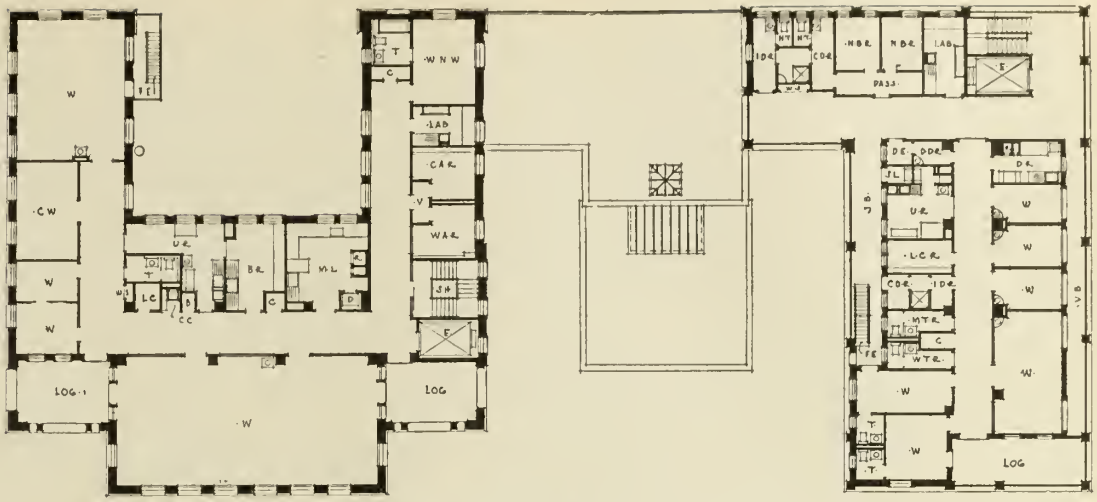


Fig. 9. St. Louis Children's Hospital, St. Louis. Third floor plan.

Fig. 10. St. Louis Children's Hospital, St. Louis. Fourth floor plan.

Fig. 11. St. Louis Children's Hospital, St. Louis. Fifth floor plan.

ISOLATED WARD BUILDING

In the basement of this building is the communicating corridor, connecting the whole Children's Hospital group with the buildings of the Barnes Hospital. A large part of this space is used for storage purposes. There is a separate room for the storage of mattresses, which are suspended on a trolley and thoroughly ventilated after sterilization. A built-in sterilizer is found on this floor.

On each ward floor is found an "island" suite for nurses or mothers. This includes an "infected" dressing and undressing room, with a connecting lavatory and toilet. From this room the attendant passes through the shower stall into the clean dressing room, which also has its lavatory and toilet. The clean room communicates with a short passage from which three bed rooms open, while the passage itself opens directly on the fresh air corridor. The "clean" nurse passes through the shower room to the "infected" dressing room before proceeding to the ward; coming from the ward her progress is in the opposite direction.

The verandas surrounding the island ward unit have already been described. From the open air corridor kitchen supplies can be delivered directly to the ward kitchen, the porter remaining outside. In the same way supplies can be delivered to the linen rooms and the service rooms, and sterilized linens can be collected by the laundry porter.

There is a special entrance and gown room for the visiting doctor; a utility room equipped with bed pan sterilizer and communicating with the linen sterilizing chamber; a linen and chart room; and a discharging suite consisting of undressing room, shower compartment and dressing room, the latter opening on the service veranda. There are separate toilets for male and female patients, two private bed rooms with individual toilets, and three one-bed wards, with running water in each. The largest room is designed for four beds or five cribs, and will be used especially for convalescents.

The peculiar requirements of this type of building, composed so largely of the "islands" above referred to, presented a peculiar problem in construction, and for the sake of economy as well as flexibility, this part of the group was designed as a concrete skeleton wherein each monolithic floor slab is supported at the outside edges by the exposed reinforced concrete columns, while all exterior enclosing walls are of special building tile and rough plaster, painted. It is worthy of note that there is absolutely no connection within the group between the isolated ward building and the hospital proper. The ingress and egress of patients, doctors and nurses, as well as food supplies, are through outside and separate channels. The total capacity of the three isolation units is thirty-five beds.

An integral part of the St. Louis Children's Hospital is its County Department, situated eighteen miles from the city. New buildings, with a capacity of fifty patients, have been erected and will be described in a subsequent issue.

## THE WORK OF THE SURGICAL TEAM IN THE HOSPITAL[1]

### Each Individual Is a Cog in a Machine That Should Respond to Every Impulse Given by the Chief—Some Essentials of Successful Cooperation

By DR. NOAH R. HARLAN, Freeport, Ill.

WHEN every mind and hand that has to do with the fulfilment of a definite accomplishment bends all efforts to that achievement regardless of personal desires—that is team work.

In the operating room the goal sought is the rapid and successful culmination of the operation.

The surgical team in the Freeport General Hospital consists of:

1. The chief surgeon.
2. The first assistant.
3. The second assistant.
4. The third assistant (often).
5. The surgical nurse.
6. The utility nurse.
7. The anesthetist.

And as aids:

8. The family physician.
9. The special nurse.

First, the surgeon—the chief of the team. It is he who really holds the key to good team work, provided his squad is normally efficient. If the surgeon chief comes to the operating room in an unhappy frame of mind only a miracle can avert poor team work, for the pilot is not holding steady. Little annoyances reach prodigious proportions and soon thought and technic are tremulously near unpardonable disorder. This is the severest test any team can be put to, but so well equipped should it be that by concerted and timely action its captain is coaxed back to his normal function,

[1] An address before the staff of the Freeport General Hospital, July 7, 1915.

or, failing in this, the day still saved by its even pull and balance.

It is easier for the surgeon chief to save his team on its "off days" than it is for the team to save its surgeon on his "off days," yet a good team is always prepared for the test, for the greatest of operators now and then suffers physical depression and mental irritability, as a result of manifold cares.

The first assistant should know what operation is to be done and should review the preparations of his chief, that no essential of the operation will be missing when they are needed. It is a body blow to good team work to find after the operation is in full swing that the scissors are not out or that the chromic gut is missing.

The first assistant should stand between the chief and extraneous annoyances from other members of the team. He should, for instance, when necessary, direct what kind of needle, ligature or suture should be prepared; and these instructions should be delivered in plenty of time for the preparation to be accomplished before the articles are actually needed.

Questions pertaining to the operation from lesser members of the team should be directed to the first assistant. Thus, with the first assistant guarding minute details, the chief is left free to pay undivided attention to his operation.

The surgeon will frequently consult with his first assistant, and so thoroughly in harmony should their thoughts be, when once a task is decided upon, that four hands work as controlled by one mind.

The first assistant is, of all the staff, the favored member. Working intimately with the chief he garners a rich harvest from a vast field of experience. With measured tread we, each of us, march daily to the terrestrial brink of life and when the surgeon's path meets the sunset he leaves to his first assistant the greatest of all treasures—tried truths and good-will that is read by a large clientele.

The second assistant should pretty much hold his peace and his retractors. Too many instructing and directing serves but to confuse. The second assistant serves as extra hands for the first assistant, who should be his chief. The second assistant should rarely invade the field of immediate action unless specifically directed to by the first assistant by either word, action or look.

The third assistant stands for the most part in the suburbs of activities with sterile gloved hands up (not down at his side or folded) waiting alertly for any cruder task that may present itself. If more retractors are required than the second assistant can successfully handle, the third man will find his opportunity to help.

Nurses on the standard surgical staff consist of:

1. The surgical nurse.
2. Two utility nurses.
3. The special nurse.

The head surgical nurse is rich in experience if she has kept her eyes open, for she has for weeks served her apprenticeship as utility nurse. Knowing the steps of the operation to be performed, she may easily follow the steps and have the requirements ready for each step before they are requested. Anticipation of the operator's wants is a big time-saver and acts often as a balm to incipient irritation.

If a standard operation is to be done, for example an appendectomy, it is the surgical nurse's fault if any ligature or instrument is lacking. Certainly, the surgeon or his first assistant picked them out, but the head nurse placed them in the sterilizer and should have carefully checked up their selection—as a pharmacist guards a doctor's prescription and is held by law responsible for sending out a poisonous draught even though so prescribed.

The surgeon had a thousand things to think of before he came to the hospital for this operation —saw a score of patients with a variety of troubles. The life of his surgical nurse is, for the time being at least, the life of a specialist, and he has just such a nurse to insure him the best surgical environment. As the operation closes one specter should invariably arise to confront the surgical nurse—the question, "Have we all the sponges?" The answer to this question she should always know, whether asked or not.

The utility nurse should be constantly present and not down in the basement or otherwise out of hearing part of the time. Should she be compelled to step into another room she must not forget to come back quickly. Her chief, the head surgical nurse, may wish her to pick up and resterilize fallen instruments, move hand bowls, get more sutures, remove specimen, etc., and no delay, once the operation is begun, is pardonable.

The utility nurse will see to it, without being requested to do so, that all visiting doctors and others permitted in the operating room are properly supplied with gowns. There may be present some relative or friend unable to stand the sight of an operation although believing at first he could do so. The utility nurse is his guardian and upon her shoulders his welfare rests, and she must see that he is safely and gently conducted from the room should faintness overcome him.

The government of the operating room during the operation in matters other than pertaining to the direct surgical procedure is in the hands of the utility nurses. They will see that visitors do not come dangerously near sterile paraphernalia and they will answer all questions of onlookers not particularly vital unless these be asked by visiting physicians, when the chief or his first aid will respond.

The anesthetist should, we believe, be a trained physician and one particularly versed in human mentalities. He should know fear and its antidote. He should know how, in five minutes, to ingratiate himself into his patient's confidence. The day when any available individual was, under the eye of the operator, considered safe to administer ether or chloroform is happily taking its place on the musty shelves of barbaric practices. The duties of the anesthetist and his responsibilities are great. We can touch them but lightly here. He should, from the moment of beginning the anesthetic to its close, pay strict and absolute attention to his patient. Not a word will be heard from a good anesthetist during even a three hours' operation unless it is to notify the surgeon of a failing vitality or in answer to a question put by the surgeon. Skill, a practical knowledge of psychologic matters, and an unrelenting watchfulness are the cardinal elements in the makeup of a reliable anesthetist.

I have a strong suspicion that many an occasional stormy post-operative course which mystifies the surgeon may owe its origin to an improperly given anesthetic.

As aids to the surgical team we have:

The family physician and the special nurse. It is well if the family physician can see the patient some thirty minutes prior to the operation to give her the comfort of knowing that this tried friend will be near her during the ordeal. Condoling with the patient just the moment before the anesthetic begins is to be condemned, for it breaks into that twilight sleep just at this time so desirable. The family physician may have acutely observed the patient for weeks and may offer valuable suggestions during the operation as to findings. Often he plays the part of third assistant.

The special nurse should be in the operating room the major portion of the time in readiness to perform any duty required. She should not at this time be in the patient's room reading a novel or in another part of the institution gossiping. She should see to it that the patient's bed is ready and warm. She will also support morally overanxious relatives with frequent encouraging reports during the ordeal of a long operation.

Every member of the surgical team, from chief to utility nurse, should be on time to the minute.

There are nine members in the team I have described. If one member delays the team ten minutes, a total of ninety minutes, or one and one-half hours' time is lost, the time of skilled scientists. So habitually prompt should each be, that on those rare occasions when he or she is not ready at the appointed minute all will know uncontrollable circumstances have intervened.

All should be quick and accurate in their part of the work. In private home life a wait of five minutes is not bad, but that same five minutes transferred to the surcharged atmosphere of the operating room is exactly half an hour.

The task before the squad is the quick, skillful completion of a successful operation and all should keep their thoughts riveted to that objective.

Surgeons, assistants and nurses, if their natures are tinctured with normal kindness, will never become so calloused as to forget the meaning of an operation to the patient or the patient's family. To the average layman the operating room is a red arena in which his chosen surgeon and his team mates cope with death, the prize at stake being the life of a loved one.

The environs of the operating room will often lay bare before the surgical team the very soul of the patient—quivering in its nakedness. With self-control seduced from its throne by the first stages of the anesthesia, one peers past the disabled guardian into the most secret chambers of that patient's character. The strong man of the commercial community is shown to the team as a blubbering coward and the refined woman sometimes mimics most accurately a trooper swearing. All these happenings must be kept ever inviolate by all members of the team. No look of surprise or word of comment should escape, and certainly mirth should not be provoked, for to the relative standing near it is far from a funny matter.

The spirit of the operation should so thoroughly permeate the room that no extraneous gossip is permitted once the anesthetic is begun. Discussion of politics, social affairs, or other cases will never arise unless the initiative is taken by the surgeon chief.

There is an appreciable percentage of selfishness in all normal human make-up and, as the women say of men, "the way to the heart is through the stomach," I believe the way to fan personal ambition is to pay attention to that inherent quality—selfishness. So I say to each member of the Freeport General Hospital's surgical team, keep trained to the minute and the glory of progress in the eighteen months of this institution life with its brilliant success now established will reflect honor and glory upon each of you.

## THE STATE OF NEW YORK DEVELOPS AN AMERICAN SPA

### Saratoga Springs, Under State Commission, to Be All That European "Cures" Have Been in the Past—And Something More

By ALBERT WARREN FERRIS, M. D., Superintending Director for the Reservation Commissioners

THE State of New York has acquired 160 wells, springs and bores, comprising approximately all the valuable and authentic springs in the city of Saratoga Springs. Thus the method of unified ownership which has been in vogue on the European continent for three hundred years, has been finally adopted in this country, and the result, scientifically as well as financially, will be of the greatest benefit to the commonwealth.

An important part of the value of the mineral waters lies in their application and utilization in the form of baths, since they contain, in supersaturation, great quantities of carbon-dioxide. In this respect they are not paralleled in this country by any springs east of the Rocky Mountains. The principal value of bath waters of this class, namely, alkaline-saline waters containing carbon-dioxide, is in the treatment of certain diseases of the heart and blood vessels, including certain stages of arterio-sclerosis; neurasthenia; gout, rheumatism and arthritis; anemia; and obesity. But the tonic effect of all baths in waters of this nature, graduated as to the strength of brine and as to the temperatures, as varied by the physician, is of great use in many conditions of reduced vitality, impaired nutrition, and impeded circulation, with the accompanying symptoms of lassitude, headache, anorexia and insomnia.

Fig. 1. The Casino at Saratoga Springs. Formerly the famous Canfield Club.

A surgeon frequently finds his patient in such a condition as to need "toning up," improvement of general physique and increase of confidence and nerve poise, before the operation can be performed with an expectation of the best results. A proper course of carbon-dioxide baths is of great avail in preparing a patient for the strain and drain of an operation, as well as in hastening convalescence and restoration to vigor after an operation.

It is a common custom to send the patient, before or after the operation, to a selected locality where freedom from noise, absence of dust, purity of air, and comparative absence of moisture combine with country advantages and out-of-door life to provide the best environment available. Saratoga Springs offers the advantages of mountain air without the depressing influences of a high elevation. The city occupies a central position on a plateau about 25 miles square, averaging about 300 feet above sea level in the town and its neighborhood. The soil is sandy loam, clay and sand, all glacial drift, and is in general very porous.

There is a large proportion of sunny days and the sky has the blue of the open country. In 1912, 115 days were partially cloudy and 128 days were sunny throughout, making a total of 243 days out of 366 days on which the sun shone. In 1913, 101 days were partially cloudy and 133 days were sunny throughout, making a total of 234 days out of 365 days on which the sun shone. The air is unusually fresh, dry and tonic, owing to the large number of trees and the fact that the air comes to us from the boundary hills—the Kayaderosseras, foot hills of the Adirondacks, and the Palmertown range of the same mountains, together with the Green Mountains of Vermont—which furnish breezes from either side and from the North. Thus one at Saratoga secures the advantages of a mountain climate without enduring

the rarefication of the atmosphere of a high elevation, a most favorable condition for cardio-vascular sufferers.

The city contains about 13,000 inhabitants. There are automobile roads running in many directions. There are miles of streets shaded by magnificent elms, with enough maples and pines, locusts, lindens, cherry and apple trees for variety. There are scores of attractive villas with broad lawns covered with grass as green as in England. There are famous hotels in the town and on the well known Saratoga Lake, as well as many excellent "pensions" and boarding houses.

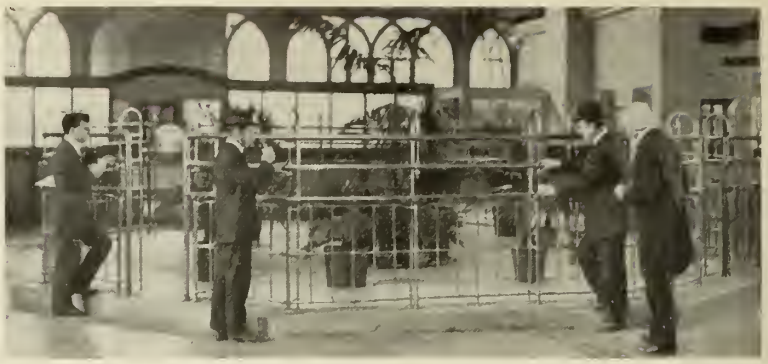

Fig. 3. Drinking Fountain, Hathorn Drink Hall, Saratoga Springs.

The park of ten acres, with terraces, groves, ponds and Italian garden, presents a charming variety of hill and lawn, and includes within its limits the famous Congress Spring, as well as the Columbian; the former Canfield Club, now the Casino; and the impressive memorial erected by the village to the memory of the late Spencer Trask, president of the first reservation commission. The state owns three small reservation parks in the town, one of which surrounds the historic High Rock Spring with its great cone of tufa, first revealed to the white man by the Indians in 1643. The reservation property also includes the sixty-acre Lincoln Park, where stands the Lincoln Bath House, to which feeble patients are taken in wheel chairs from the trolley station, a quarter of a mile distant in the pine groves. Besides the Lincoln Park, the reservation has acquired and is laying out the 260-acre Geyser Park, two miles from the city, wherein are many spouting and flowing springs, a mile of picturesque Coesa Creek, and the ravine of the Willow Brook, into which flows the outlet of the Soft Sweet Spring, which produces an abundance of fresh water.

The reservation commission is not laying much stress upon the radio-activity of the Saratoga waters, although all of the waters have this feature, which the chemists connected with the U. S. Bureau of Mines state to be due to an unusual content of dissolved radium salts. The absurd claims and the unfortunate popularity of radium has tended to cause extreme conservatism in the minds of clinicians; but it is an undoubted fact that radio-activity is of marked benefit in gout, rheumatism and arthritis, and in conditions due to a deposit of inflammatory material, post-operative or otherwise.

The state has provided pamphlets for the information of physicians, patients and the general public, which give state-

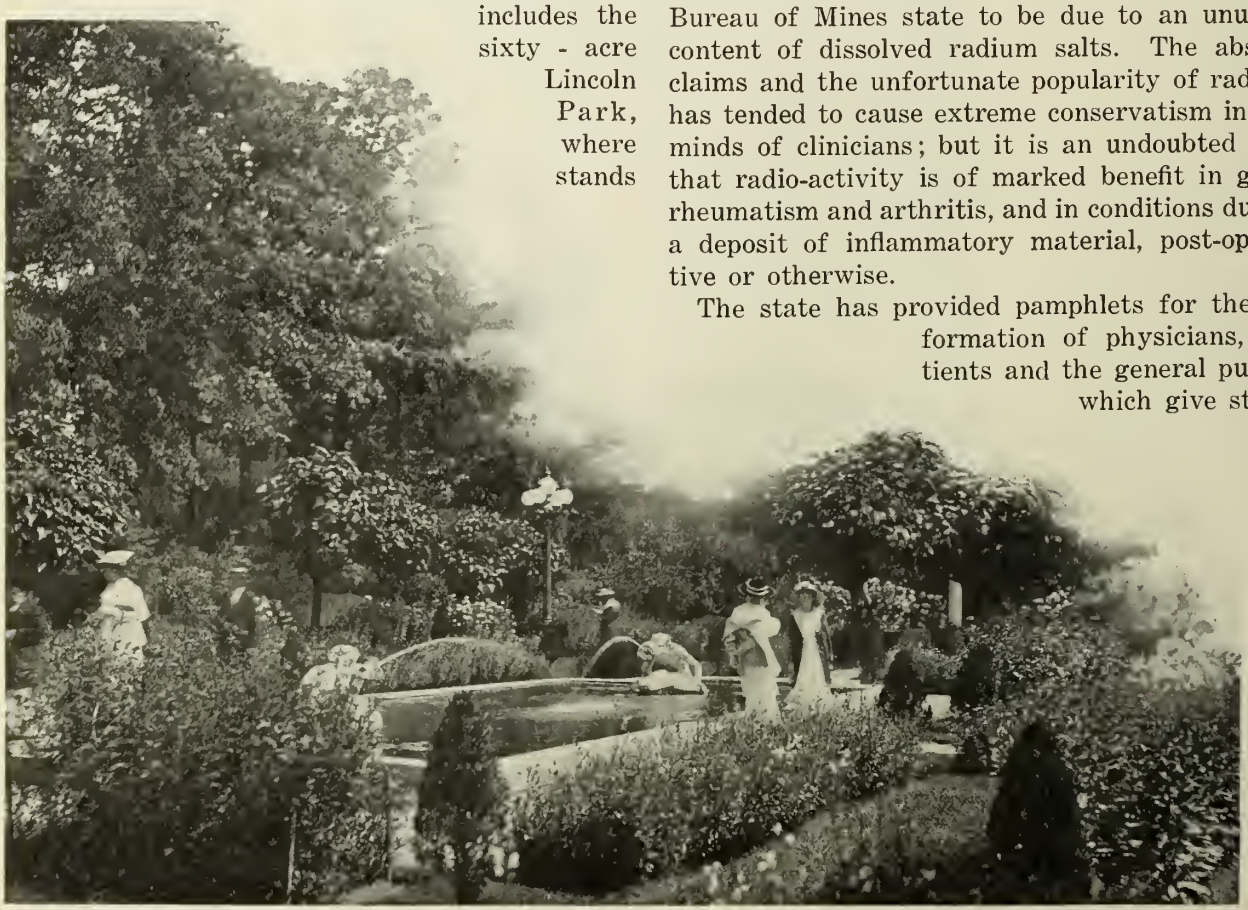

Fig. 2. Italian Garden, City Park, Saratoga Springs.

ments concerning the ingredients and uses of all the drinking waters, as well as the general theory of the use of the bathing waters. The state also furnishes a brochure on the carbon-dioxide baths. All of these pamphlets may be had upon application at the office of the reservation commission at Saratoga Springs.

For the robust patient, or for members of the family who accompany the patient to Saratoga Springs, many sports are available, including tennis, golf, fishing, driving, bicycling and boating, large parts of the year; as well as skating, tobogganing, sleighing and snow-shoeing in winter.

Saratoga Springs does not offer attractions to hospital patients, except to those of its own locality who can be accommodated in the excellent hospital built here about three years ago. The place appeals to invalids and semi-invalids such as have been in the habit of going abroad to the spas of England, France, Austria or Germany. It is destined to become a very attractive health resort of the best type, where women worn with domestic duties or the social engagements of a strenuous winter season may find rest and recuperation, as well as where overworked, overfed and underslept business and professional men may recover in large measure their health and largely increase their efficiency. Many scores of men of this type discover for the first time upon being examined by a life insurance physician, that their vitality is reduced, their digestive organs are much disordered, and that arterial changes have already taken place. Many of these people become patients immediately, very wisely deciding to secure such relief and improvement as wise management and skilful medical care can give them. Many of them are those unable to pass an examination which will permit them to secure life insurance, and many more are so improved that they continue their work with but slightly reduced efficiency, and live on in comfort for many additional years.

During the season that has recently closed, nearly 12,000 baths have been given in the three bath houses owned by the State. One of these is a very small affair with most modest equipment in which treatments are given at lower prices; another consists of an old spring house, a center building with two wings, which was comfortably fitted up with necessary furniture and equipment for various treatments, during the lack of funds necessary to erect the permanent elaborate state bath house which the commonwealth will finally build. The third is a building which was erected by a layman several years ago, and which the state bought and partly refitted, installing over thirty porcelain tubs for the Nauheim baths, a modern control table for giving douches, sprays, etc., hot air cabinets for neuro-vascular training, and electric light cabinets for eliminating treatment.

Provision is now made for handling one thousand patients per day during the usual bath hours, and in all probability so large an income will be derived from these bath houses during the next season or two that the legislators will be prompt in allotting as much money as is necessary to build the new ornamental state bath house needed, secure in the belief that not only will vast numbers of invalids be benefited, but that the state will secure a constant and large revenue from this source. In the old Hathorn Spring building a large room on the first floor has been

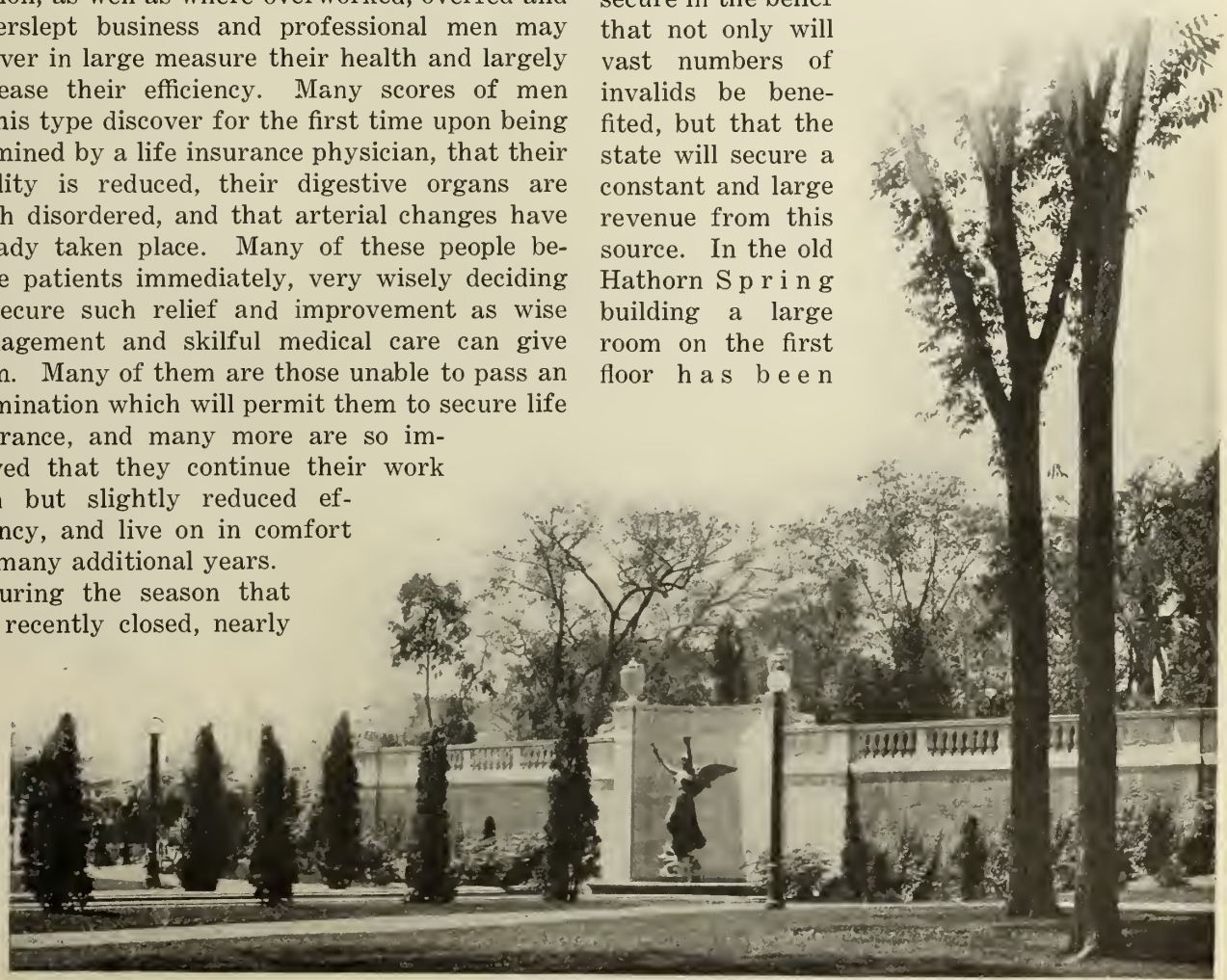

Fig. 4. Trask Memorial Fountain, Saratoga Springs.

fitted up as a Drink Hall, with tables and chairs enough to accommodate one hundred people at a time, with a multiple drinking fountain where a thousand can help themselves to the Hathorn and Congress waters during the day. Besides this Drink Hall there is a free entrance to the Hathorn Spring, where multitudes can obtain as much water as they desire during the entire day. On each of several days during the summer 1,700 people passed through the five-cent pay entrance to the Drink Hall, most of them coming in the early morning for the before-breakfast waters. Free drinking places were also maintained in the beautiful sunken garden about the Congress Spring, at the Columbian Iron Spring, and at the High Rock Spring, where the water wells up as of old in the hollow of the famous High Rock Cone, first seen by a white man in 1643, and without doubt visited by the Indians for many centuries before that date. Arrangements were made for people to help themselves to the water of the Emperor Spring in its little sunken approach, as well as of the Karista Spring, the famous iron spring in the Geyser Park. The visitor may help himself, from bowls, to the water of the Awassa Spring, of the Champion No. 2, or from the spouting jets of the twin springs, Zalama and Alnoba, these constituting four of the seven springs in Diondaroga, "The Vale of Springs."

The drinking waters of Saratoga Springs are divided into three classes:

1. Saline-laxative, comprising Hathorn No. 1, Hathorn No. 2, Hathorn No. 3, Coesa, Emperor, Peerless, Royaneh (formerly Pavilion), Congress, Orenda, and others.

2. Alkaline-saline, with alkalinity predominating over the salinity; including Geyser, Zalama and Minnonebe. Geyser and Minnonebe, the former decidedly diuretic, are both used as table waters, after part of their lime, magnesium and iron has been removed by sedimentation and filtration.

3. Alkaline-ferruginous or chalybeate waters, comprising Columbian, Congress and Karista. The last named is an unusually strong iron water, varying in this constituent widely from time to time, but generally assaying over 600 milligrams per liter of ferrous bicarbonate.

All the waters are naturally surcharged with a large amount of carbonic acid gas. They are used —according to the choice made by the physician, and according to the patient's necessities—in digestive disorders, especially intestinal stasis, inactivity of the liver and flatulence; in certain stages of kidney disease; in anemia, diabetes, gout, rheumatism and arthritis. The fact that magnesium bicarbonate has an anesthetic effect and therefore acts without discomfort or pain, and also the fact that the waters are most of them palatable and attractive, will result in their large use for the disorders mentioned by thousands of patients who have heretofore gone to Carlsbad and other foreign spas.

A proper diet, proper exercise and judicious use of the Saratoga natural waters have resulted in marked and prompt benefit in a very large number of cases of disordered metabolism, without any other treatment.

Twelve paths were laid out in Geyser Park, on various levels and traversing various distances, thus providing a beginning of the Stokes-Oertel system of hill climbing, so popular and valuable at some of the German spas, and of such advantage in the re-education of the heart muscles in selected cases of cardio-vascular disease. Some of these paths pass along murmuring brooks in romantic ravines, and some traverse the edges of steep declivities heavily wooded with hemlocks and hard wood trees; some pursue a meandering course on a fairly level plain; some wind in and out under the shade of pine groves or clusters of white birches.

The 110th annual meeting of the Medical Society of the State of New York will be held on May 15, 16, 17 and 18, 1916, during which period many physicians and their families will take advantage of the opportunity to inspect the work of the state reservation and the equipment and appliances available for the treatment of the classes of disease already enumerated. Many will enjoy traversing the old Indian trails, worn by the moccasins of the Mohawk Indians who inhabited this region as they went forth on their hunting and fishing expeditions, or on the great northern war trail, or on the great trading trail that leads over through the Sacandaga River Valley into the valley of the Mohawk River. Many will enjoy visiting the battle fields of old Saratoga and Bemis Heights, where one of the fifteen decisive battles of the world was fought, ending in the routing of Burgoyne and the final disappearance of the British from the North American colonies, and leaving the thirteen states cemented into a firm and permanent union.

For all grades of active people, for all varieties of men, for those with slender as well as those with well-filled purses, Saratoga Springs is destined to make provision, so that none who need the remedial help of its waters shall be denied them, in order that their health-giving virtues may be as widely enjoyed as is possible.

The present commissioners are Frederick W. Cameron, of Albany, George C. Van Tuyl, Jr., of Albany and New York; and former Senator Frank

Fig. 5. Congress Spring Park, Saratoga Springs.

Fig. 6. Coesa Spring. One of the geysers at Saratoga Springs.

Fig. 7. Congress Spring, Saratoga Springs. Note the festal nature of the scene.

N. Godfrey of Olean, who serve without remuneration, and under whom the following official staff carry on the work of development and maintenance of the department: Louis W. Noland, secretary; Charles C. Lester, counsel, whose remarkable knowledge of the geology and mineralogy and hydraulics of the region has been invaluable to the commissioners; Professor Charles G. Anthony, C. E., consulting engineer, who has devised and designed much of the equipment and has suggested and created certain of the features of the reservation work, such as the beautiful sunken garden of the Congress Spring; Herbert Ant, the chemist, who enjoys a remarkable reputation as a water and bacteriological analyst; and Albert Warren Ferris, M. D., who has furnished for two years the ideas concerning the medical aims and remedial developments necessary to lay the foundation for the health resort, in which matter the reservation commission takes the lead and formulates the policies and provides the actual installations necessary in administering treatment.

Allusion has been made to the Trask Memorial, erected by the citizens of Saratoga Springs to the memory of Spencer Trask, financier, publicist and perhaps the foremost citizen of his day in recognizing the value of the subsequent development of Saratoga by the State, and in consistently advocating and contributing to all advancements made. Without any exception, the most attractive single feature in the City of Saratoga Springs is the noble bronze figure by Daniel Chester French, sculptor, entitled, "The Spirit of Life." This stands in the center of a limestone niche, surmounting a rock through which a fountain gushes forth at her feet. The figure holds aloft in her right hand a sprig of pine and in her left a patera, from which drip silvery threads of water, as if offering to the world the life-giving waters which Nature has provided us lavishly and which have bubbled up and spouted forth for centuries, inviting use and development by the citizens of our State, who have been so tardy in recognizing the virtues and great abundance of its mineral fountains. This statue in its setting constitutes the "Trask Memorial."

A full meed of praise should be given to former Commissioner George Foster Peabody, who for over five years was the genius of this entire development, and lent his extremely valuable aid in initiating as well as perfecting almost every feature of the enterprise.

To Senator Edgar Truman Brackett is due the fullest acknowledgment for the inspiration of putting the springs under state control and ownership, for securing the passage of the enabling legislative measure, and for fostering and aiding in every way during the unfolding and progress of the work. The Brackett gateway into Congress Park has been erected by fellow-citizens of Saratoga Springs as a slight testimonial to Senator Brackett's successful labors and permanent interest.

## URGES EARLY EYE CARE OF CHILDREN

### New York Health Department Makes Report Showing Results in 5,000 Cases

The following conclusions, from a recent weekly bulletin of the Department of Health of New York City, are the result of nearly five thousand complete and careful refractions performed at the Health Department's Pleasant Avenue Clinic:

"1. In accordance with the observations of previous investigators, myopia or short sight is a condition rarely present at the beginning of school life, but which gradually increases with the age of the child, so that at the age of sixteen years almost one-half of our cases had more or less myopia.

"2. Children with hypermetropic conditions became myopic, the percentage of emmetropia or normal eyes remaining about the same.

"3. That the correction of the hypermetropia and astigmatism with the constant wearing of the correcting glasses will prevent the development of myopia in many instances is the belief of most ophthalmologists. Myopia in its high degrees becomes more than a mere handicap in life's race, producing degenerative changes, detachment of the retina, with ultimate loss of sight; therefore, apart from the relief and improvement in vision afforded by the wearing of glasses in cases of hypermetropia and astigmatism, the early refraction of children to prevent the development of myopia is most important.

"If a child has a high degree of hypermetropic astigmatism, mixed astigmatism or myopia of medium or high degree, with vision after correction of only $^{2}/_{50}$ or less, it should be placed in special classes, with a curriculum that minimizes the amount of near work. There should be close cooperation between school authorities, school nurses, school doctor on the one hand and ophthalmologists on the other. Education boards should employ some one interested in the conservation of children, preferably an ophthalmologist, in an advisory capacity. Such an officer could work to improve many existing defects, such as improper desk adjustments and poor lighting. The regulation of type and paper in school books is another matter to come under such an officer's control.

"Above all, let the slogan be 'refract the children early and compel the wearing of proper correcting lenses.'"

### Elizabeth Steel Magee Hospital Opened

The new Elizabeth Steel Magee Hospital for Women, at Forbes and Halket streets, Pittsburgh, Pa., which has been described in detail in an earlier number of THE MODERN HOSPITAL, was formally opened October 27, with elaborate dedicatory ceremonies. The dedicatory address was delivered by Dr. Walter William Chipman, professor of obstetrics and gynecology of McGill University, Montreal, Canada. The hospital is a gift to the city of Pittsburgh from the late Christopher Lyman Magee as a memorial to his mother. In their present state the buildings, with their equipment, have cost $650,000. When the hospital has been entirely completed it will represent an expenditure of $750,000, and will accommodate 300 patients. Dr. Charles Edward Ziegler is medical director and P. W. Behrens manager of the institution.

A new municipal hospital for contagious diseases has recently been opened at Jamestown, N. Y.

## HOSPITAL FLOORS—COSTS, ADVANTAGES AND PRACTICAL POINTS

### Many Problems Incident to Selection of Flooring Materials—Methods of Laying Also of Great Importance—Extra Costs for Preparing Floor Beds Must Be Considered

By RICHARD E. SCHMIDT, Chicago, Member of the American Institute of Architects

THE question of what kind of floors to select for a hospital is so insistent and important that a table of comparative prices and a statement of their relative qualities and merits is of value to hospital builders.

If pipes and conduits can be laid between the joists so that wood flooring can be nailed directly to the sub-flooring and no special nailing foundations are required, floors of wood are the cheapest in a building of wood floor construction, but the question of "deadening" the floors enters, and if a good quality of deadening is required the whole cost is increased considerably. This does not occur in the case of buildings of fireproof construction, either reinforced concrete, or steel and hollow tile—at least not to the same extent.

The costs per square foot of the various types of wood floors, except No. 11, are based on using $^{13}/_{16}$ inch thick by 2¼-inch face, tongued, grooved, end matched, blind nailed floors, underlaid with one layer of deadening felt, weighing two pounds per square yard.

Item No. 1—Clear rift sawed yellow pine, 10c.

Item No. 2—Clear birch, 11c.

Item No. 3—No. 1 birch, 8½c.

Item No. 4—Clear maple, 9½c.

Item No. 5—No. 1 maple, 8½c.

Item No. 6—Factory maple, 5½c.

Item No. 7—Clear quarter-sawed white oak, 15c.

Item No. 8—Clear plain white oak, 10½c.

Item No. 9—No. 1 plain white oak, 9½c.

Item No. 10—Clear plain red oak, 10½c.

Item No. 11—⅞ inch by 6-inch matched No. 1 yellow pine sub-flooring, 4½c.

Item No. 12—Traversing, planing and hand-scraping, 4c.

Item No. 13—Traversing, planing and machine scraping, 2½c.

Item No. 14—"Deadening" or "deafening" on wood sub-construction is sometimes attempted by the use of felt paper, which is included in the above unit costs, but it is not likely to be efficient. More expensive materials are required, and these consist of so-called quilting or mineral wool, or mortar, or flax, or cork in combination with wooden strips, which are required to provide proper nailing for the flooring. A fair deadening probably costs 8 cents per square foot, and other grades as high as 11 or 12 cents per square foot. One of the best forms of deafening consists of sheets of cork one inch in thickness, on which all kinds of plastic and tile floors can be laid, and can be obtained for 10 cents per square foot laid in place on wood or cement sub-floors. Wood flooring can be laid on it by nailing through into a wood sub-floor.

Item No. 15—Wood floors in buildings of fireproof construction must have wood nailing strips which are usually secured to the sub-construction by ⅛x1-inch iron strips about 8 inches long nailed crosswise on the underside of the wood strips about three feet apart. The dimensions of these wood strips are 2 inches thick, 3 inches wide, beveled on one side and laid 16 inches center to center. The space between them is filled with cinder concrete; such strips and concrete cost 5 cents per square foot.

Item No. 16—The cost of finishing wood floors must be added; close grained wood, such as yellow pine, maple and birch, require no filling and can be finished with three coats of varnish, or a coat of varnish and two coats of wax. Such finishing costs about 2½ cents per square foot.

Item No. 17—Open grained wood, such as oak, requires a filler in addition to the varnish, and such finishing costs about 3 cents per square foot. Maple and birch are sometimes run so true on new machinery that they can be used without traversing, planing and scraping, and the following is an illustration of the cost when laid directly on an underfloor in a building having wood floor construction. For this cost, Items No. 4 and No. 16 must be added, making a total of 12 cents per square foot.

If a deadening is required, Item No. 15, ranging from 5 to 11 cents a square foot, must be added, depending upon the kind of deadening selected.

For the cost of a clear plain white oak floor, add Items Nos. 8, 13 and 17.

Or, if the cost of the same kind of flooring in a fireproof building is required, add Items Nos. 8, 13, 15 and 17, amounting to 21 cents per square foot.

Portland cement floors cannot be laid with a uniform hardness and finish. Troweling and mixing cannot be done so perfectly that every portion of a floor will have the same proportions and the same amount of troweling, consequently the surface wears differently. It must be laid with joints unless one is willing to risk the danger of irregular

cracks. This material is, however, suitable in some spaces in an institution such as basement corridors and storerooms.

A new process of finishing Portland cement floors has found considerable favor and appears to be durable. It consists of the heating of cement floors with inverted gasoline torches and filling the wearing surface with a colored mixture of paraffin and beeswax. Heat causes this composition to penetrate to a depth of ⅛ to ¼ inch. It makes the surface very dense, waterproof, dustless and provides a much more pleasing color than the ordinary cement floor. This finish can be obtained for a cost of from 6 cents to 8 cents per square foot, depending on the quantity.

Special cement paints for cement floors must have at least three coats to cover properly, and will cost approximately 5 cents per square foot.

A cement floor consisting of 3½ inches of coarse concrete and ½ inch thick wearing surface will cost about 10 cents per square foot.

Very good cement tile made by hydraulic pressure are obtainable. These have an unusually smooth, dense surface for cement work and are made in a variety of colors. The most favored dimensions are 6 by 6 inches. Such floors are suitable for every use in a hospital with the possible exception that a denser material should be selected for operating and dressing rooms. The average price of such tile, including the foundation concrete, is 50 cents per square foot.

Terrazzo floors consist of Portland cement with an addition of marble chips laid in place in a plastic state, rolled, ground and sometimes polished. These are subject to cracking along irregular lines, the same as plain cement floors. The cracks can be concealed by laying lines of tile or marble cubes to divide the floors into squares having an area of 75 to 100 square feet. The average price is 27 cents per square foot.

Artificial marble tile is made practically in the same manner as the above described cement tile, but it contains a coarse aggregate of marble chips; these tiles are ground on a rubbing bed and polished. They are also obtainable in a variety of colors and mixtures and have about the same appearance as terrazzo floors. Cracking or separation is taken up by the joints. The average cost of such flooring, including foundation, is 45 cents per square foot.

The densest and hardest material is undoubtedly desirable for operating and dressing rooms, and for these one of the vitreous or ceramic clay products should be used, such as ceramic mosaic in small squares, of which the average price is 40 cents per square foot, or 6-inch by 6-inch vitrified or flint tile, average price 60 cents per square foot, or 2-inch or 3-inch hexagon tile, average price 52 cents per square foot.

Quarry tiles are suitable for entrances, loggias, solaria, roof gardens, etc.; the average cost of these, including foundation, is 50 cents per square foot.

American encaustic tile floors also cost 50 cents per square foot.

The prices for cement floors, cement tile, terrazzo, artificial marble, ceramic mosaic, flint, quarry and encaustic tile include about two inches of foundation concrete, for at least this thickness is required to provide the proper foundation. This depth is usually sufficient to enclose the ordinary conduits if these are laid on the sub-wood floor or on the sub-construction of a fireproof building.

Conduits and pipes can be enclosed in a sub-construction so that its upper surface can be roughly troweled or screeded to be ready to receive one of the floorings described below, but if it is not so prepared the cost of about two inches of concrete, which is the thinnest durable thickness, must be added to their cost.

Linoleum, cork and rubber tile floors require troweled surfaces. The untroweled costs about 7 cents per square foot, the troweled 9 cents per square foot.

Rubber tile would undoubtedly be very serviceable and satisfactory in operating and dressing rooms; the average cost is 80 cents per square foot, to which must be added the cost of the sub-floor.

The flooring of wards and private rooms is undoubtedly the most important, on account of their proportion of the total floor area.

Wood as flooring was used for this almost wholly in the past. In recent years terrazzo, magnesia composition and linoleum have been used to a considerable extent.

Magnesia composition, known by trade names, such as Acmetile, Asbestolith, Asbestone, Atlas Floor, Doloment, Flexotile, Karbolith, Kellastone, Marbleoid, Monolith, Mineral flooring, Torgoment and Velvetile and many others are plastic floors which are laid and troweled in a variety of colors. Such flooring can be applied directly on wood, provided that steel lathing is secured to the sub-floor, but such floors are noisy on wood construction without the use of a good deafening and an extra underflooring; in large quantities the material itself, in about ½ inch thickness can be obtained for 20 cents per square foot, but the average price is 25 cents per square foot; the metal lathing and deafening is likely to increase this to 30 or 35 cents per square foot.

If the sub-construction of a fireproof building enclosing the conduits is screeded, the cost of a

½ inch thickness of magnesia composition will not exceed the prices mentioned, but if 2½ inches of foundation is necessary, the total cost will be from 27 to 32 cents per square foot, depending upon the quantity.

Granite or marble chips are sometimes mixed with the magnesia and the grinding of the floor brings out the marble or granite so that its appearance resembles terrazzo. If this is done, the cost averages from 30 to 35 cents per square foot, plus sub-concrete, if it is necessary.

Linoleum is probably the most desirable flooring for wards and private rooms, taking cost and qualities into account. It is more resilient and a poorer conductor of heat than any of the floors hereinabove mentioned, and it is, therefore, less noisy, less tiresome to those walking on it, and not as cold underfoot as any of the others. Its price fluctuates with the price of linseed oil; the average cost of this material, solidly cemented to a sub-floor, is 15 cents per square foot. This price is for the battleship grade, which is the heaviest quality, about $^{7}/_{32}$ inch in thickness.

A wooden sub-floor, unless of narrow strips well seasoned and smooth, does not supply a good foundation, for every inequality of the sub-floor will eventually be apparent in the linoleum. The edges of curling floor boards become especially noticeable. Inasmuch as the ordinary underfloor of a building of wood construction consists of wide boards, it is not suitable for foundations for linoleum. Further, as the conduits, pipes and deafening require space on top of the sub-floor, it is necessary to supply nailing strips and another sub-floor which will increase the cost 10 cents per square foot.

It is quite feasible to provide troweled surfaces on a sub-construction of reinforced concrete buildings suitable for linoleum, whereas it is always necessary to provide an additional troweled concrete on the sub-construction of steel and hollow tile fireproof buildings. In making an estimate it must be remembered that the sub-floor for magnesia composition need not be troweled, while that for linoleum must be smoothed and troweled. The least cost of a linoleum floor is, therefore, 15 cents per square foot, laid on wood, 17 cents in a reinforced concrete building having a troweled structural floor, or about 23 cents per square foot where it is necessary to provide an additional layer of troweled Portland cement concrete. The price of imported battleship linoleum has advanced about 20 cents per square yard on account of unusual conditions. Moire linoleum cannot be obtained at this time. The prices given above include the laying and cementing of the linoleum solidly to the sub-floors.

Linoleum floors suffer from the excessive application of water. They should not be flooded but mopped without the use of too much water. Frequent wetting and drying is the cause of shrinkage and the opening of unsightly and undesirable cracks and joints.

Plain linoleum tracks easily with dusty as well as muddy footprints, and an irregular figured linoleum such as moire linoleum is very desirable. Its coloring is neutral and harmonizes better with wall decoration than the ordinary tan, green or red battleship linoleums. Moire linoleum, however, is not made of the same thickness as the battleship.

Corridors should have noiseless floors in combination with borders, bases and plinths of harder material, and for these linoleum is recommended.

It should be allowed to stretch and season on the floor for several weeks before it is cemented solidly to the sub-floor, and the joint between the edges of the linoleum and the hard floor should be left open for a width of about two inches and filled with magnesia composition only after the linoleum has taken its final dimensions and if the strip is filled with black or a color of proper contrast to the colors of linoleum and the harder flooring along the baseboard, an effective combination will be obtained.

An elastic composition similar to rubber or linoleum, ¼ inch in thickness and cut into 6 by 6 inches, 3 by 3 inches and other sizes, is called "Dreadnought" by one manufacturer, "Arrowlock" by another, and "Linotile" by still another. These pieces are laid in pattern-like tile, resulting in a durable floor, which is more ornamental than plain linoleum. The material is obtainable in blues, grays, reds, buff, black and green, so that a variety of pleasing combinations can be made. The material can be nailed and cemented to wood sub-floors or cemented to troweled Portland cement. The cost is 55 cents per square foot.

Asphalt flooring may be suitable in the service departments of very large public institutions such as county or state infirmaries, and the average cost of these for a thickness of ¾ inch ranges from 17 to 25 cents per square foot, but the color is unsatisfactory and it also requires a foundation of Portland cement concrete costing at least 9 cents per square foot.

Insulite is a new plastic material about the consistency of ordinary lime mortar and which is laid to a thickness of about ⅛ inch. Its color is a dark reddish brown and is as soft to the tread as linoleum; it is not attractive for wards, corridors, or any of the rooms occupied or used by patients, but it appears to be very suitable for laboratories, laundries, large kitchens and for im-

proving old, defective Portland cement and wood floors in the service portions of hospitals. The makers state that it is a combination of mineral rubber, asbestos fibre and a calcium, that it is absolutely water and dampproof and resists all kinds of acids, and under no circumstances will it crack, chip or peel off. A prominent engineering laboratory has made the following report:

"Pieces of steel were given two coats of Insulite and after properly drying were immersed for 48 hours as follows:

"Immersed in 50 percent nitric acid, coating unaffected. Immersed in 50 percent hydrochloric acid, coating unaffected. Immersed in 50 percent sulphuric acid, coating unaffected. Immersed in 50 percent caustic acid, coating unaffected.

"A crockery dish was coated inside with Insulite, and after drying, a quantity of burned lime was allowed to slake in the dish. The Insulite was absolutely unaffected."

The average cost is from 15 to 18 cents per square foot.

Wood, linoleum, cork and most of the magnesia compositions should not be used under plumbing fixtures or in rooms in which considerable water is used. The other kinds of flooring will resist the action of water.

The weights of floor materials and their foundations also affect the cost of a building by requiring a greater or lesser strength of the structure to adequately carry the respective weights. This factor is of considerable moment in large buildings, but too involved for consideration in this article.

The advantage of sanitary baseboards which are flush with the wall surfaces and joining the floor by a curved surface are so obvious that the old-fashioned projecting bases which join the floor at right angles are now used but rarely. Wood cove bases are rather impracticable, inasmuch as plaster patching must be done after the base has been set flush with the plaster. The moisture of the plaster swells the wood, later it shrinks and leaves a crack which is difficult to fill. Such bases, including the cost of patching of walls probably cost 25 cents per lineal foot. Another disadvantage is that they can hardly be made more than two or three inches in height and do not protect the wall surface from the effects of scrubbing water.

Baseboards of material which can be placed continuously, i. e., jointless, appear to be most satisfactory, although artificial marble baseboards are very good, inasmuch as they can be made in lengths of four to five feet. Terrazzo, magnesia composition and magnesia composition with marble aggregate are included in this category.

Artificial marble, terrazzo and magnesia composition with a marble aggregate present a better appearance than plain magnesia composition bases, for they are rubbed by hand or machinery, which removes the inequalities of plain magnesia composition which is left with a troweled or hand-run surface.

Flint, quarry, white glazed and other forms of tile bases are made in small pieces about 6 inches long and 6 inches in height. The great number of joints makes this form of base less impervious and more difficult to lay straight and true.

Terrazzo and magnesia composition baseboards require placing of grounds for the stopping of the base or of wall plaster. These grounds must be wood or steel and cost from 3 to 10 cents per lineal foot. This cost must be added to the cost of the baseboards.

The following are average prices per lineal foot of sanitary cove bases six inches high flush with wall plaster:

| | |
|---|---|
| Portland cement | $0.20 |
| Terrazzo | .35 |
| Artificial marble | .70 |
| Flint tile | .85 |
| Plinths, each | .65 |
| Quarry tile | .75 |
| Plinths, each | .75 |
| White glazed tile base | .75 |
| Plinths, each | 1.00 |
| Magnesia composition | .25 |
| Ground out magnesia composition with marble chips | .50 |

Some contractors do not deduct for doors of ordinary dimensions, and in return do not charge anything extra for plinths. This is generally the custom among contractors for terrazzo, artificial marble and magnesia.

Magnesia composition is the most suitable material for baseboards in combination with linoleum, cork and rubber floors, especially if they are made in combination with a border of the same material, both base and border containing a marble aggregate and finished by grinding and polishing.

### Physical Examination of Kitchen Workers

The New York Health Department recently sent out letters to all the hospitals of greater New York urging physical examination of their kitchen staffs, and citing a section of the revised sanitary code which reads as follows:

"Sec. 146. Employment of persons affected with infectious or venereal diseases prohibited. No person who is infected with any infectious disease, or with any venereal disease in a communicable form, shall work or be permitted to work in any place where food or drink is prepared, cooked, mixed, baked, exposed, bottled, packed, handled, stored, manufactured, offered for sale, or sold. Whenever required by the sanitary superintendent or director of the bureau of food inspection, of the department of health, any person employed in any such place, shall submit to a physical examination by a medical inspector of said department. No person who refuses to submit to such examination shall work or be permitted to work in any such place."

# LIBRARIES AND THEIR MANAGEMENT IN STATE HOSPITALS[1]

## Books and Periodicals Are Useless in Institutions Unless the Library Is Systematized and in the Hands of a Competent Person—Patients Sometimes Make Good Librarians—Three States That Are Doing the Work Well

By MIRIAM E. CAREY, Supervisor of Institution Libraries, Minnesota State Board of Control

EVERY superintendent who has established a library in his hospital has found sooner or later that it would not run itself. There must be organization and system before a collection of books becomes a working library, and there is no system which operates automatically or is self-sustaining. In each library there must be some responsible human being to keep it going.

How to supply this need is a problem not yet fully solved, and it is the purpose of this paper to call attention briefly to the method in operation at present in three of the middle-west states, namely, Iowa, Nebraska and Minnesota, in each of which the responsibility for the libraries in state hospitals is placed on one person who is expected to carry on a group of libraries as though it consisted of branches of one central system.

The order of procedure is the same in all three states: the supervisor systematizes each library and brings it into line with public libraries, then turns over the daily administration of it to some resident of the institution whom she instructs in the routine to be followed. After leaving the hospital, the supervisor keeps in close touch with the local librarian and returns at intervals to assist in all extra work connected with the growth of the library, aiming in every way possible to take the brunt of the responsibility. This method of operating libraries is not ideal, but it is adequate to keep them open regularly and in good condition, and when it chances that the local librarian is a person of intelligence and enthusiasm the results are even more satisfactory.

The crux of the whole matter rests with the librarian, for, given the books, the system, and the supervisor, unless the one who presides regularly in the library is intelligent, tactful and interested in the patients the whole enterprise is crippled.

Fig. 1. Story hour on the boys' wards, Orthopedic Hospital, Lincoln, Neb.

Fig. 2. Story hour on the girls' wards, Orthopedic Hospital, Lincoln, Neb.

It is seldom that this work is recognized as that of a separate department. Usually it is added to other duties, for which the person is paid and for which he has been trained. The extra labor connected with the library does not appeal to the worker, who considers it just that much more than his share of the day's toil. For these reasons it is sometimes better to select a patient to take charge of the library of a hospital, as there are ordinarily certain of these who have the ability to do this with profit to themselves and satisfaction to the institution.

The state hospital for the insane located at St. Peter, Minnesota, has its library in a large, well-lighted room on the second floor of the administration building, which has an outside entrance and may be reached also by an elevator, so that it is easily accessible from any section of the hospital. The library is carried on by one of the

[1]This is the third paper on institution libraries. "The Hospital Library—Books for the Patients," by Miss E. Kathleen Jones, was published in October; "Medical Libraries in Hospitals," by Mrs. Grace W. Myers, was published in November.

Fig. 3. Library, Orthopedic Hospital, Lincoln, Neb.

patients, who works under the direction of the state supervisor, and it has been the experience in Minnesota that these librarians have been well able to do the work and stand the test of "checking up." The interest taken in the work, however, varies with the individual. Sometimes the patient-librarian is full of enthusiasm and does instinctively the things librarians are trained to do, such as visiting the wards with books chosen for special persons, reading aloud, story-telling, and generally exploiting the library in ways that have greatly increased its usefulness. One such librarian has her own visions as to the possibilities of libraries in hospitals for the insane, and I transcribe herewith her ideas on this subject:

"As May was an unusually busy month, with many outside attractions, I think a record of 526 books read is promising. I strive to have them read, and I am often scolded for carrying books around with me, but in this way I sell my wares and keep my patrons supplied. I am still interested in the work, and each day I come more and more in contact with the readers and realize what a library means to them. It is to many their only soul-salvation, and were I to live long enough I would persevere until I had a building where all readers could go and sit off the wards—a quiet resting-place, where we could read aloud, discuss our books, have lectures and a general uplift movement."

The chief object of a library in a hospital is recreation, but certain ethical considerations govern the selection of books and administration of the library in hospitals for children, the tubercular and the inebriate.

The state hospital for crippled children in Minnesota has a most interesting history, which should be at least referred to whenever the institution is mentioned, for it is a monument to the fervid and determined enthusiasm of one physician and surgeon who combated opposition and unfriendly insinuation before the state legislature so successfully that there is now in the suburbs of St. Paul a hospital for children, especially the crippled and deformed, which is a source of pride and comfort to the state. The surgeons of St. Paul, so the superintendent has told me, place their services at her disposal at any time, day or night, according to the need of the children. A beautiful room is provided in this hospital for what is "really and truly" a children's library, and as the function of the institution is partly educational, one of the teachers is the librarian. The wise suggestions of the superintendent to those offering gifts—all hearts are tender toward these children—have brought about results which are extremely attractive. The standards of the best children's libraries regulate the plans and purposes of the superintendent, who intends to make this one a model.

A well equipped and successful library for children and young people is connected with the Orthopedic Hospital at Lincoln, Nebraska, which is conducted by the state library commission. As this hospital is the permanent home of some of the patients, the library is in charge of one of these residents—a cripple—who has taken a librarian's course of training and carries on the work with much spirit and success.

Fig. 4. Library and reading room, State Sanatorium, Cass County, Minnesota.

Fig. 5. Library, State Hospital for Crippled Children, St. Paul, Minn.

The State Sanatorium of Minnesota has developed the community spirit to a great extent. All sorts of clubs are flourishing there and the library needs to concern itself with something besides mere recreation. Debates, for instance, tax the ordinary library considerably, but a reading room with a good line of magazines accessible to the patients solves this problem to a great degree. This hospital recognizes the library as a distinct department, and employs one of the patients to carry it on. It is open daily and has made good as a desirable feature of the life of the place.

When the state of Iowa opened its hospital for inebriates, a library was from the start considered of prime importance, and was provided for liberally. The same course has been pursued in Minnesota. The value of a library for inebriates is chiefly diversional, but as the inmates have a great curiosity about alcoholism there is an opportunity to put before them books on this subject which will have effect. Books on self-control and the training of the will have seemed to appeal, and there is a certain interest in biography, travel and general literature. It is frequently the case in such hospitals that there are patients who have had good education and training as to literary values. A library carried on by such a person becomes a meeting place for kindred spirits and of guidance for those who wish to read, but are unfamiliar with books.

The value of periodicals in hospitals is unquestioned. While all books have qualities which make them especially adaptable to conditions of institution life, being portable, cheap, comparatively durable and of unchanging value, magazines have these qualities in increased degree. They fill exactly the need of the "back wards" among the insane, bed patients in general hospitals, and in fact the whole population. Therein lies the difficulty in keeping them circulating. Everybody wants to keep them and nobody is willing to pass them along promptly.

Fig. 6. Library, State Hospital for the Insane, St. Peter, Minn.

The most influential lady in the state hospital for the insane at Mount Pleasant, Iowa, has given this matter her personal attention, and devised the following working plan, which is adequate to keep magazines moving through any hospital: At Mt. Pleasant new magazines are sorted so that the men and women will receive the ones most in-

teresting to them respectively, and each number is given a cover of stout Manila paper. If there are two persons working together in the library, with plenty of time at their disposal, it is a good plan to put book-pockets and cards inside the covers, as the cards, being retained in the library, will always show where a given magazine is. But as this system takes more time than the needs of a hospital really demand, a substitute method is to paste on the cover of the magazine a slip of paper with the numbers or names of wards and cottages which are to receive it, and when the magazine is sent out the slip is checked accordingly. By working out a scheme for the movement of the periodicals a certain guidance is given the circulation, which will follow the lines indicated by the slips on the covers. Every Saturday morning the attendants are required to bring to the library all the magazines on the wards. These are put into laundry baskets at one side and new magazines are issued in exchange. After library hours the returned magazines are sorted over; those that are in good condition are put into drawers by themselves to be issued the following week, and the worn numbers are collected for use on the back wards. In this way every ward in the hospital receives a certain quota of fresh periodicals every week—the newest issues, the best of the older ones, and the partly worn are all kept moving. It will occasionally happen that the same magazine will be received more than once, but in the long run all patients who wish to read will have a chance to see the ones they prefer.

Unless literature of this sort is issued from the library according to a definite system of one kind or another, it will not reach the patients. It will accumulate in unknown or unacknowledged places and the result will be entirely unsatisfactory.

It may be said, in conclusion, that the supervision of a group of libraries by one person has been demonstrated satisfactorily in three states, and that while it is not claimed that it is the best method possible, it has certain desirable features peculiar to it. For instance, there is an *esprit de corps* among the librarians, which is a pleasant thing. They and the supervisor form a library staff which serves thousands of readers and circulates an amazing amount of literature annually.

Attention should be called to the Nebraska method of purchasing books and library supplies. By act of legislature a sum of money is set aside for libraries in institutions, to be expended by the state library commission. They are able then to buy whenever it is advantageous to do so, and to buy single books on request.

Why not, then, apply the "budget system" to any group of libraries having one executive officer? Combine the appropriations for books set aside by different institutions into one book or library fund and expend it whenever and wherever good editions are offered at reduced rates. Libraries that can buy in the open market are able to secure finely illustrated books—so desirable for recreation and education in institutions—which would be too costly if bought through ordinary channels.

## HOSPITALS OF INDIA

### Annual Reports Give Some Interesting Side Lights on Institution Progress in the Great Oriental Empire

India, according to a recent annual report on its progress and conditions, has about 3,868 hospitals. These are dealt with in the report under three groups: 1, "Civil Hospitals and Dispensaries," the 2,820 institutions under this heading having treated 515,162 in-patients and over 30,000,000 out-patients during the year; 2, "State Special and Railway Hospitals," numbering 351, with a showing of 98,171 in-patients and 2,331,969 out-patients; and 3, "Private Non-aided Institutions," with a yearly record of 57,252 in-patients and 4,828,357 out-patients treated in the 697 institutions included in this group.

The Medical College Hospital in Calcutta has added an electrical annex and decided on the construction of a new eye hospital.

The new hospital in connection with King George's Hospital, Lucknow, was opened during the year; and Bombay reports bringing up to date the equipment of her civil hospitals.

Bengal, the Central Provinces, and the Punjab have been trying out the system of exacting fees from well-to-do persons.

Kasauli (Punjab) and Coonoor (Madras) already have Pasteur Institutes and another has been sanctioned at Rangoon.

Insanity is not as prevalent in India as in the European countries, hospitals for the treatment of the insane are apparently few and far between.

### Home Treatment for the Insane in New York State

At a recent conference with the New York State Hospital Commission, Governor Whitman directed that the system of treating insane patients in their homes instead of in the fourteen state hospitals be extended. It is believed that this order not only will relieve the congestion in the state institutions, but will tend to cure insanity in its early stages.

Under this system the superintendent of a state hospital for the insane may release a patient upon parole. The patient must report regularly to the established dispensary for examination and treatment by the physician, and the employed social worker must call upon him in his home and see that conditions there are proper for the improvement of his mental condition.

Steps are being taken at Flint, Mich., looking toward the enlargement of the Hurley Hospital of that city, a municipally controlled institution.

# INFECTIONS CAUSED BY "SLIPS" IN OPERATING ROOM TECHNIC

## It Is Easy to Blame the Catgut, but Operators and Assistants Are More Often Guilty—Some Examples Suggesting Avenues for Improvement

By A LABORATORY TECHNIST

IN a large number of technical investigations of surgical suture problems covering several years, it had been my pleasure and privilege to attend the clinics, in most cases by special invitation, of many of the most prominent surgeons of the United States and Europe. By a close study of *efficiency* in each case, from the viewpoint of an impartially interested student of microbiological problems and by contrasting it with that of operators with less experience, intuition or aseptic training, much information, that I earnestly hope will be of material benefit to surgical science, has been gained.

Some of the errors in technic hereafter mentioned will be so obvious to our most experienced operators that they will be likely to question the authenticity of the records; in other instances the possibility of infection from the sources or in the manner indicated will appear too remote to be seriously considered. I will therefore state at the outset that all the records given are from actual experiences in investigating the problems and no "slips" in technic have been included that cannot be remedied by a *practical* scheme of aseptic control in a modern hospital. Slips of very trivial importance have been omitted in spite of the fact that several consecutive errors of this nature would be in the aggregate of vital importance.

In several instances the errors indicated were checked by bacteriologic control, while in others the direct course of the carrier (or carriers) of infection from a contaminated, unsterilized or improperly "sterilized" object to the suture material as it was buried in the wound was too obvious to the trained observer to need such bacteriologic evidence or proof. To prevent needless repetition, when the same technical slips have occurred under exactly the same circumstances in different operating rooms, they have generally been omitted from my records herein. When they have occurred under differing circumstances they have at times been included.

*Operating Room No. 1:* This small hospital, obviously run on economical lines in an endeavor to keep within a too narrow income, reported several successive post-operative stitch abscesses in the fascia and skin. These being late infections, the conclusion arrived at by those in charge was that they "must be catgut infections," and therefore the suture material could not have been sterile.

Result of investigation: No utensil sterilizer; therefore no efficient method of sterilizing the basins, etc., between an infected and clean case. Basins were "sterilized" by half filling them with one in twenty carbolic for half hour and then rotating the solution for a few moments in order to "sterilize" the upper half and rim. There was one wash basin in which nurse, surgeon and assistant scrubbed up; there was no gooseneck faucet to the basin; the wash basin was simply a focus for the exchange of infected epithelium.

The liquid soap used was in a tipping container. Operator, assistant, nurse and resident were compelled to touch the same unsterile lever in order to tip the device.

After scrubbing up the hands of each were immersed in a basin containing two or three ounces of alcohol, obviously too small an amount for efficiency when used in this manner; the basins were too small for immersion of the arms.

In the donning of the gloves the fingers of the glove first donned were smoothed down by the fingers of the other ungloved hand and thereby covered with epithelium; this in turn was used to smooth down the second gloved hand. To demonstrate this point I requested the nurse to pick up a sterile needle and insert it into a tube of sterile bouillon. This tube afterward showed staphylococcus albus.

At this hospital all samples of the catgut tested previous to handling proved sterile, but a sample that had been through the gloved hands of the suture nurse, surgeon and assistant and cut off from the strand used in suture of the ovarian stump (in a clean case) proved infected with staphylococcus albus.

Patient's skin had been scrubbed up in the usual manner and swabbed with two percent iodin solution. A culture made by lightly scraping the skin of patient thus prepared, immediately adjacent to the incision and just before closing wound, proved infected with staphylococcus albus. A platinum loop was not used in this test, as it would be too smooth to remove epithelium, but the previously sterilized metal scraper, the scalpel the surgeon used in the operation, was inserted in the culture tube.

In making the subcuticular stitch in closing the wound the strand of chromic catgut was drawn by means of the needle from the skin surface downwards from end to end.

In order to sterilize the outside of the tubes of catgut at this hospital they were immersed in a solution of bichloride. To test the efficiency of this method some of the tubes were transferred from the bichloride to sterile culture tubes by means of sterile forceps (the tubes were not broken); result, a heavy growth of bacillus subtilis from the outside of the glass tubes.

In each case controls were used to test sterility of culture medium; there were no contaminations.

*Operating Room No. 2:* This hospital reported several successive stitch abscesses, also that the catgut had been bacteriologically tested and spore-bearing organisms that had grown out in three days had been found. Result of investigation three years after infections had occurred: aseptic technic at the hospital thorough; the tubes of catgut had been immersed (by means of the normally greasy and unsterile hands) in one in twenty carbolic solution and had not been boiled. One in twenty carbolic, according to bacteriologic tests and practically all authorities and text-books on the subject, is not a reliable antiseptic for the destruction of spores. In testing the catgut the suture nurse used the same technic as in the previous operations. In grasping the tubes in order to remove them from the carbolic solution with her sterile gloves, she infected the fingers of her gloves from the outside of the tubes (the growth of organisms had only been inhibited). With these contaminated gloved fingers she broke the tubes and inserted the strands of catgut, thereby contaminating the gut into the bacteriologic culture tube. There was no growth for three days, because all but the spore bearers had been destroyed by the antiseptic.

In this case the bacteriologic work had been thorough, but the interpretation of the results had been incorrect, casting an unwarranted stigma on the manufacturers for three years.

*Operating Room No. 3:* There were numerous infections in this hospital, though the city bacteriologist had repeatedly tested the suture material and invariably found it to be sterile. Both the catgut and the city bacteriologist were therefore under suspicion.

The superintendent had reported that in those cases where "twenty-day" catgut had been employed, "sloughing of the muscle sutures and decomposition of the fat" had occurred within three days.

Result of investigation: Suture nurse, who did not wear gloves, tested each strand for tensile strength before handing it to the surgeon at operation, thereby "squeezing out" and implanting the skin staphylococci on each strand.

*Operating Room No. 4:* Here was one of the finest operating rooms, with some of the most skillful operators of this country; the team work of surgeon, assistants and thoroughly well-trained operating room nurse required the closest watching of details to detect any error. The first case enters operating theater; celiotomy; free pus in abdominal cavity (not diagnosed); gloved hand of surgeon inserted in abdominal cavity for exploratory purposes, etc., during operation; surgeon and assistant holding retractors; surgeon calls suture nurse to hold retractor while he changes gloves; having changed gloves, surgeon requests suture nurse to hand him a tube of No. 2 medium hard chromic catgut. Nurse lifts the corner of sterile sheet covering suture table and selects the tube from a large number in a basin, handling the tops of several tubes in so doing. This case is sutured and leaves operating theater.

Patient No. 2 enters operating room; a clean hernia case. Tables, dressing towels, instruments, gloves, etc., changed, but suture table with tubes of catgut (which had been boiled before starting operations for the day) were not changed or reboiled. Surgeon asks for a tube of fine chromic catgut; suture nurse lifts same corner of covering sheet and selects one with her gloved hands from the batch of tubes left in the operating room and contaminated from the previous case. The moment she grasps the corner of sheet she has infected her gloves; she has not seen this slip and hands the thereby infected strand to the surgeon with possibilities that may readily be imagined.

*Operating Room No. 5:* A series of stitch abscesses occurring in the early winter. Catgut tested by pathologist of the hospital and invariably found sterile. Result of investigation: steam from sterilizers and moisture from the humid atmosphere of operating room condensed against the slanting roof of operating room, trickled down to lowest point and dripped at intervals into solution basins, dressings, tables, etc., directly underneath.

*Permanent* wash basins in operating room (sterilization by usual methods unreliable) in which operators scrubbed up. (Removable basins sterilizable by heat or water running from the faucet should have been employed.)

Gloves "sterilized" by boiling once for three minutes. The fingers of gloves could be seen to float out during ebullition. Bacteriologic tests have demonstrated that gloves must be submerged by some mechanical contrivance, then reversed and resterilized to insure sterility of both sides of gloves. Scalpels "sterilized" by immersion in carbolic solution. (This method is of questionable efficiency, especially in emergency operations or between operations, the element of time being an important factor in chemical sterilization.)

In scrubbing up between operations, etc., the fingers of *each* nurse and operator were dipped into the *same* basin of green soap. Catgut tubes were "sterilized" by soaking in aqueous bichloride.

Sterile towels on instrument tables were contaminated during operation by solution from the basins in which instruments were thrown and surgeon's gloved hands hurriedly rinsed. As soon as such sterile towels become wet they soak up organisms from the glass top table underneath, which previously has been *inefficiently* sterilized by wiping over with a carbolic soaked gauze pad. (Tables should have been covered with a steam sterilized sheeting.)

## THE PHYSICIANS' HOSPITAL OF THIEF RIVER FALLS, MINNESOTA

### A Twenty-Five-Bed Community Hospital, Financed in a Novel Way—Substantially but Inexpensively Constructed—The Doctors Own and Operate the Institution

By H. W. FROEHLICH, M. D., of the Staff

A REACTION seems to have come about among people in the smaller towns and villages against having their loved ones taken away to the large hospitals in the big cities. Instead, these people are demanding of their doctors and their other fellow citizens that small yet fully equipped hospitals shall be established in their midst, and that the doctors shall be enabled to render their services according to modern methods.

There are several ways in which a hospital may be promoted. Probably the most common way is for some church organization to stand back of the project and do the necessary work in raising the funds, oversee the construction of the building and later manage the institution.

Another way is to organize a hospital association among the active men and women of the community and give to every person who contributes toward the building a certificate of stock, which makes him or her a member of the association; then some of the most influential and active members are chosen to make up the board of directors. Sometimes a private hospital is established by a doctor or a firm of doctors or a nurse. This is not very satisfactory, because a doctor has not the means nor the practice to build or equip a good building; as a rule he rents some old house and equips it as best he can, but things are inconvenient, and the nursing incompetent, and good scientific work cannot be done.

In Thief River Falls, a town of 6,000 people, there was no hospital and the need for one was imperative. One method after another was tried. In the first place, out of a dozen church organizations it was impossible to decide to which one to give united support.

A hospital association was next organized, for the purpose of building a seventy-five bed hospital; but it was impossible to raise that amount of money by public subscription, so this fell through.

Fig. 1. Physicians' Hospital, Thief River Falls, Minnesota.

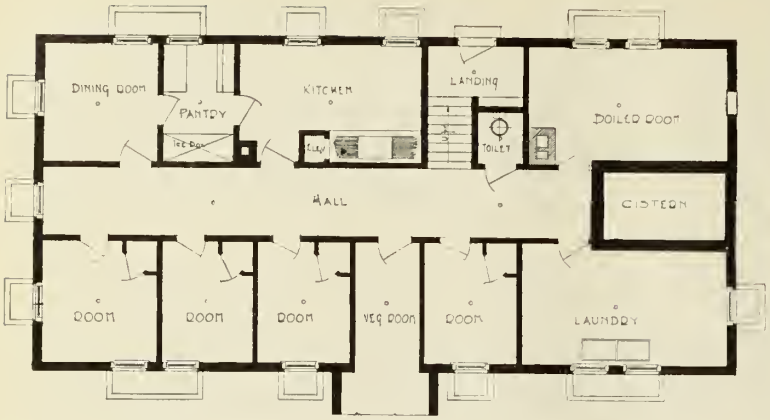


Fig. 2. Physicians' Hospital, Thief River Falls, Minnesota. Basement plan.

The county commissioners were then appealed to for a county hospital, and a resolution was passed favoring the idea; and the matter was then left for the people to vote bonds to the amount of $50,000 for the erection of a county hospital. This issue failed to carry, and we were still without a hospital.

At this point Drs. F. H. Gambell, O. F. Mellby, H. G. Hieber, J. E. Douglass and H. W. Froehlich took things in hand for themselves, and determined to have a hospital. They got together and organized the Physicians' Hospital Company.

This was incorporated as a stock company under the state laws, and its capital was placed at $25,000.00 and divided into 250 shares.

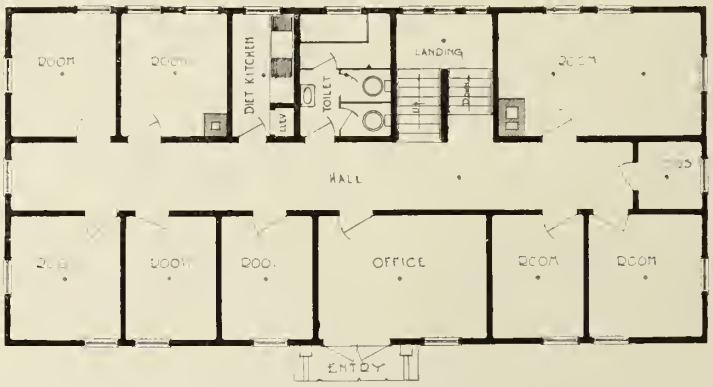


Fig. 3. Physicians' Hospital, Thief River Falls, Minnesota. First floor plan.

Our purpose was to build one unit of a modern and up-to-date hospital, as our funds were not very large and we felt that if we could only get a start the rest would come more easily. We made a small assessment on each member and purchased a lot, and engaged Mr. Lutz as architect to draw up plans after the various ideas of the founders. On the whole, we believe we have succeeded in putting up one of the neatest and most convenient hospitals ever built for the money.

As, like most small communities, we had to keep down the cost, we decided on a frame building, covered with stucco on metal lath outside, and plaster on metal lath inside; the walls contain two air spaces, which make it a fairly warm building.

As I hope to make this article of some help to other communities similarly situated, I will go somewhat into the details of the construction and management of our hospital.

The building is 62 by 30 feet in area, with a full basement and two stories, and accommodates 25 beds. The exterior of the building is of moss green stucco, and all wood trimmings are painted white, which makes a very pretty effect. The roof is a gravel-pitch one, and guaranteed by the contractor for ten years. The basement walls are of concrete, and extend four feet above the grade line.

In the basement we have the furnace room, general kitchen, pantry, dining room, laundry, vegetable cellar and four sleeping rooms for employees. The floor is of cement, covered with cement paint and linoleum. The woodwork is of yellow pine finished in the natural color.

On the first floor we have the reception room, also used as an office; this opens into a six-foot hall, which runs the entire length of the building. At one end there is a small section taken for a linen closet. Leading from the hall are a bath room, a diet kitchen, one large room for three or four beds, six private rooms, and a superintendent's room. Leading from the first floor to the second is a wide, easy stairway in the center of the building.

The second floor has two large rooms for three or four beds each, five private rooms, diet kitchen and bath room, and operating room; opening from the operating room is a small sterilizing room. At one end of the hall is a doctors' dressing room,

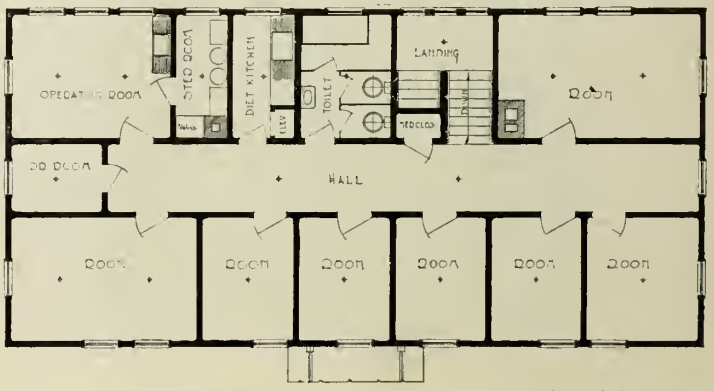


Fig. 4. Physicians' Hospital, Thief River Falls, Minnesota. Second floor plan.

which is also used as a linen room and for operating supplies. There is also a medicine closet on this floor.

*Interior finish.*—All woodwork is painted with four coats of white enamel on fir lumber, as are also the walls of the operating and sterilizing room. The other walls are sand-float finish and tinted. All corners are rounded to a three-inch radius. For baseboards we have a special design; the lower part of the base is nailed to the rough floor only, while the upper part or molding is nailed to the wall, so that in case the floor settles there never will be the crack between the baseboard and the floor, which is the case where the baseboard is nailed to the wall only. The base is rounded to the floor, which makes it easy to sweep and clean. This is a detail that I feel should be considered by every one who is contemplating building a home or a hospital.

*Heating.*—We have installed the vapor vacuum heating system, using a Bernhardt smokeless boiler. This seems to be the ideal heat for a hospital, as the temperature can be regulated for each room, and there is never the pounding or escaping steam as with the old systems. It costs a little more to instal than the old gravity hot water or the high pressure steam systems, but pays for itself in the saving of fuel.

Another feature of our hospital is that one of the radiators in the operating room is connected with the hot water heater, so that we do not have to fire up the general heating plant when we want the operating room warm in the spring and fall; in fact, it is warm at all times, as we have a Junior hot water heater going all the time to keep a supply of hot water; and it does not cost us anything extra to heat this radiator.

*Ventilation.*—Here we have the gravity ventilating system; a sheet iron stack goes up in the wall from each room to the attic; and on the roof is a large globe ventilator through which the foul air leaves the building.

*Electric wiring.*—The wiring is the common tube system and the electricity is furnished by the city. In each diet kitchen and in the sterilizing room are located plugs where heating appliances can be attached. As most light companies give a lower rate for current used for power purposes, we have this on a separate meter.

*Call system.*—Each room is connected with a buzzer and annunciator located in the hall, one for each floor. For the small hospital we feel this is the only satisfactory method, though in a large hospital, where there is a nurse on duty in the hall all the time, the light system would be better.

*Plumbing.*—We have a good grade of fixtures, although we have nothing elaborate: in the operating room we have a foot control wash-up sink, using running water and no basins.

*Floors.*—The floors are of maple, oiled, given one coat of varnish and then waxed; this keeps down the dust. The operating and bath room floors are composed of the new asbestos composition, which seems so far to be satisfactory.

A dumb elevator connects the main kitchen and the diet kitchen, which, as will be seen, are located one above the other and next to the bath rooms. In this way there is a saving in the installation of the plumbing system, which amounts to considerable.

*Cost of the building.*—The entire building was built by local contractors, each of whom did his work satisfactorily, even though we did away with the expense of a superintendent.

The general contract price was $7,900.00.
Heating, $1,800.00.
Plumbing, $1,079.00.
Electric wiring, $130.00.
Call system, $42.00.
Extras, about $50.00.

This makes the cost of the building about $11,000.00, exclusive of fixtures; the outlay for fixtures was about $2,000.00. The private rooms were entirely furnished by local people and organizations; even the high school class furnished the equipment for the operating room as a memorial to the class. We bought all the beds, so as to have them uniform, and the cost was divided among the donors, but each donor selected a dresser, a small rocker, a bedroom chair, and rug and curtains.

We had more offers to furnish rooms than we had rooms, and I am sure that this same spirit will be shown in every community, and that as soon as the building is assured the furnishings will be gladly donated.

*Financial arrangement.*—In our case all the doctors put in equal amounts of money as working capital, then the county commissioners gave us an appropriation of $4,000.00. This they are permitted to do under a state law, where there is no county hospital, the only conditions being that the hospital will give preference to county charges and that it will be maintained for a period of ten years. For the balance of the money we secured a loan from a loan company, which we are paying off at the rate of $15.00 a thousand per month for one hundred months.

To provide for this fund each doctor is charged a fixed sum for each day he has a patient in the hospital. For example, Dr. A. has a patient in the hospital for ten days in the month, and Dr. B. has five patients, each one of whom remains in the hospital for ten days; Dr. B. will be charged for

50 days. If the rate, for example, is 50 cents a day, then Dr. A. will pay $5.00 into the fund to pay off the loan, while Dr. B. will have to pay $25.00. It is only fair that the man with the largest practice, who gets the most out of the hospital, should have to pay the most into the hospital. When the loan is paid the payments will stop, and all will have an equal share. We expect the hospital to pay running expenses; or rather, by careful management we hope it will do even better.

*Management.*—In a way our position is unique in that the doctors own and manage the hospital, yet each one of the five doctors has his private practice. It is a source of pride and satisfaction that in this city the doctors are more than on speaking terms, as is not the case in so many places, to the shame and discredit of doctors in such communities.

In uniting our efforts as we have, in a common cause, and meeting together as we have to do to carry on the business, we have come to know each other better and to find that the other man is not such a bad fellow after all.

The management is delegated to a committee of three, who have general charge of affairs, while one of the doctors acts as bookkeeper. Miss Ruth Aus, R. N., is the superintendent and has immediate charge of the hospital, while Mrs. B. Grout is the matron and has charge of the culinary department. The matter of having competent people at the head of the hospital is what makes or breaks the institution; it is the little leaks here and there that run up expenses.

We have already started a training school, where we expect to give the girls the first two years of a three years' course; the last year will be spent in the large hospital with which we expect to affiliate.

The hospital was opened September 1 by a public reception to the people of the town, which was attended by about 2,000 persons. The doctors' wives, assisted by members of the Woman's Club, served coffee and wafers. The visitors were loud in their praises of the hospital and the doctors who made the hospital possible. Two men were so well pleased that they gave us their checks for $25.00 to show their appreciation.

[Editorial Analysis—It seems that Dr. Froehlich and his associates have done extremely well with their space; in fact, they have chosen the wise course by allowing an abundance of administrative space and a smaller share of space for the actual accommodation of patients. The three stories comprise a total of 5,400 square feet of floor space; and of this 2,904 feet have been given over to administration; this includes halls, stair landings, kitchen, laundry and closets—in fact, all the space not actually occupied by patients' rooms. This leaves 2,496 feet for patients, or considerably less than one-half of the total. We are accustomed to regard one-half space for administration and the other half for patients as quite fair proportions even in a large hospital, and we usually look for a much larger proportion of patients' space and a smaller administration proportion in small hospitals, since in the small hospitals there is usually a pressure to accommodate the largest number of patients. Dr. Froehlich's hospital force will be able to give the patients a much better service because of this larger amount of administration space. It was wise also to divide the three and four-bed wards between the two floors; in this way the ward patients will come nearer to getting the same attention that private room patients will get than if the wards were concentrated in one part of the house. There are only two or three criticisms to offer about this nice little hospital: in the plans it was beautifully contrived to have a long hall sweeping the whole width of the house on all three floors, so that thorough cross-ventilation could be had; it was too bad that it then became necessary to cut off the free air space by stopping up one end of the hall in the basement for a cistern well, and a small amount of space at one end on the first floor for a closet, and also one end of the second floor hall for a dressing room. In half apology for these tactical errors in construction, Dr. Froehlich explains that the closet on the first floor and the dressing room on the second floor have deep transoms, and it is intended to maintain a continuous circulation through them. The most serious error in construction, it seems to us, is in the location of the toilets, and in their insufficient number. It is assumed that there will be about twelve patients on the first floor and about the same number on the second floor; one toilet room with two seats seems not to be sufficient for twelve people, and it is almost certain that there will sometimes be both sexes on one or both of these floors, and it is impossible for men and women to use a single toilet unit where they are arranged as these are. The administrators of the hospital will regret this deficiency. It seems, moreover, that the only toilet designed for the use of the employees is the single one located in the basement, which apparently must be used for men and women. There seems not to have been a toilet for the nurses, which means a good deal of unnecessary climbing of stairs, or the common use of toilets by patients and nurses, which is not a nice thing. There should have been at least one toilet, preferably on the first floor, for the nurses, and it seems there should have been an additional toilet on the basement floor for one of the sexes, the one indicated on the plan being for the other; in other words, there should have been two toilets for employees, one for men and one for women, and a central toilet somewhere for the nurses. It seems to us, however, that the greatest tactical error of construction was in the placing of the toilets away from the window where they cannot have direct ventilation. It would seem to have been far better if the bath tubs on the first and second floors had been over next to the corridor, and the toilet seats next to the window, one on either side, so that both would have had direct window ventilation. These toilets are bound to give rise to odors, and it seems almost conclusive that the toilet located in the basement must be extremely objectionable for the same reason. However, Dr. Froehlich and his associates have built a mighty nice little hospital, which will be a great comfort to them in their attempts to do good, clean medical and surgical work.—J. A. H.]

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### Mr. J. W. Draper Killed

Mr. J. W. Draper, for the past seven and a half years superintendent of the University Hospital at Ann Arbor, Mich., was run over by a street car on the streets of his home city on Saturday evening, November 13, and died a few minutes afterward.

Mr. Draper was one of the best known hospital administrators in the country and was recognized as a thoroughgoing, highly trained and efficient hospital man. Before he became superintendent of the Ann Arbor Hospital he had been accountant and chief financial officer of the Eastern Michigan State Hospital at Pontiac for nearly twenty years, at the end of which long service he was called upon to accept appointment as successor to Mr. E. S. Gilmore, who had been elected superintendent of Wesley Hospital, Chicago.

Mr. Draper leaves a widow and a grown daughter, who has recently finished the university course at Ann Arbor. He was about fifty years of age.

# CHOCOLATE AND COCOA—THEIR COMPOSITION AND FOOD VALUE[1]

## Highly Nutritious Items of the Dietary as Compared With Tea and Coffee—Adulterants not Commonly Used, but Some Manufacturers Make Misleading and Unnecessary Claims

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COCOA and chocolate are made from the beans of the small tree, *Theobroma cacao*. In brief, the method of manufacture is as follows: After sweating and the removal of such impurities as stones, parts of the shell, etc., the beans are roasted, thus developing the flavor and making easier the subsequent removal of the shells and the grinding. The beans are then crushed by machinery, the shells being thus removed. The broken beans, known as "cocoa nibs," are then ground, the heat developed by the grinding melting the fat, and the paste thus obtained is run into moulds, where it is cooled, and makes what is known in the trade as unsweetened, plain or premium chocolate. Sweet chocolate is prepared by mixing pulverized sugar and vanilla, or other flavoring material, with the chocolate paste. In milk chocolate a certain amount of milk is introduced, either as milk itself, or condensed milk, or a milk powder, from which more or less of the milk fat may have been removed.

Cocoa is prepared from chocolate by removing by pressure a portion of the fat and reducing the residue to a fine powder, with or without the addition of flavor. While chocolate contains about fifty per cent of fat, cocoa, as a rule, contains only about one-half of that amount.

There has been some question raised as to the proper nomenclature of chocolate and cocoa. While it is true that the original product containing all the cocoa fat, strictly speaking, should be called "cocoa," or more properly "cacao," the name under which it is known in the countries where it is produced, long commercial practice has established otherwise, and manufacturers, dealers and consumers for almost a century have understood "chocolate" to be the product containing all the original cocoa fat, and "cocoa" to be the product from which a portion of the fat has been removed. To change the significance of these two names at the present time would serve no useful purpose and would cause needless confusion.

With these facts in mind the Federal Joint Committee on Food Definitions and Standards has recently announced the following standards, somewhat abridged, for chocolate and cocoa products:

*Chocolate, plain chocolate, bitter chocolate,* is the solid or plastic mass obtained by grinding cacao nibs without the removal of fat or other constituents except the cacao germ. It contains not more than 3 percent of ash insoluble in water, 3.50 percent of crude fiber and 9 percent of cacao starch, and not less than 45 percent of cacao fat.

*Sweet chocolate* is chocolate mixed with sugar (sucrose), with or without the addition of cocoa butter, spices or other flavoring materials. It contains in the sugar- and fat-free residue no higher percentages of ash, fiber or starch than is found in the sugar- and fat-free residue of chocolate.

*Cocoa, powdered* cocoa, is cacao nibs, with or without the germ, deprived of a portion of its fat, and finely pulverized. It contains percentages of ash, crude fiber and starch corresponding to those in chocolate after correction for fat removed.

*Sweet cocoa* is cocoa mixed with not more than 60 percent of sugar (sucrose). It contains in the sugar- and fat-free residue no higher percentages of ash, crude fiber or starch than are found in the sugar- and fat-free residue of chocolate.

*Milk chocolate, milk cocoa, sweet milk chocolate,* or *sweet milk cocoa,* is chocolate, cocoa, sweet chocolate, or sweet cocoa, which contains not less than 12 percent of whole milk solids in the finished product.

The above data will prove a useful guide to the dietitian as to the standard quality of the various chocolate and cocoa preparations on the market.

The most complete analyses of authentic chocolate and cocoa are those of Winton (Conn. Expt. Stat. Report, 1902, 282). The following are Winton's average figures in the original material:

| | Cocoa nibs | Chocolate | Cocoa |
|---|---|---|---|
| Ash | 3.32 | 3.15 | 5.49 |
| Insoluble ash | 1.16 | 1.41 | 2.82 |
| Sand | 0.02 | 0.06 | 0.24 |
| Nitrogen | 2.38 | 2.26 | 3.33 |
| Theobromin | 1.04 | 0.78 | 1.15 |
| Caffein | 0.40 | 0.13 | 0.16 |
| Fat | 50.12 | 52.19 | 26.69 |
| Fiber | 2.64 | 2.86 | 4.48 |
| Starch | 8.07 | 8.11 | 11.14 |

Unlike tea and coffee, those other popular household beverages, whose chief value (?) lies in their stimulating qualities, cocoa and chocolate have considerable food value. About one-half of choc-

[1] One of a series of articles on The Commoner Classes of Foods. One of these articles appears practically every month.

olate and one-fourth of cocoa is fat, while the percentages of nitrogenous matters and starch are by no means small. It must be noted, however, that a considerable proportion of the nitrogen is of the amide form, while notable amounts of nitrogen in the form of theobromin and caffein are also present. The fat also is by no means as digestible as the manufacturers would have us believe; in fact, it is quite indigestible.

Theobromin is the chief alkaloid found in chocolate and cocoa, the cocoa nibs containing on the average about one percent; caffein, which chemically is closely allied to theobromin, is also present to the extent of about 0.4 of one percent.

### ADULTERATIONS OF CHOCOLATE AND COCOA

The removal of a portion of the cocoa butter to make the product known as "cocoa," of course, is not an adulteration. The chief adulterations observed in these products have been incomplete removal of the shells and the addition of shells, starch, flour or sugar. In former times Venetian red, coal-tar dyes and other artificial colors were sometimes found. These are no longer met with in commercial chocolate and cocoa, although not infrequently iron oxide or some other iron compound is used to intensify the color in the coatings of cheap confectionery and in soda water syrups.

Many analyses of commercial chocolate and cocoa have been made in the writer's laboratory. Some of these, however, are merely of local interest, and the subjoined tables include only those brands which have a wide use in this country, and which have been analyzed since 1911. The tables include the analyses of 7 plain chocolates, 12 sweet chocolates, 11 milk chocolates, 31 cocoas, 9 compound cocoas, and 19 "diabetic" chocolates and cocoas.

TABLE I

The plain chocolates show only trifling variations in composition; they contain on the average about 50 percent of fat.

TABLE II

In the sweet chocolates the variations are greater, depending chiefly upon the amount of cane sugar used. Barring *Baker's Hasty Lunch Chocolate*, which is a cocoa rather than a chocolate, the fat ranges from 20.14 to 41.19 percent, the cane sugar ranging inversely from 63.05 to 34.55 percent. The analyses do not indicate the removal of any fat, except in the Baker brand, although in certain cases it would appear that cocoa fat had been added to make possible the incorporation of more sugar with the chocolate.

In the milk chocolates the analyses are still more variable, due to the different amounts of sugar used and to the nature of the milk product employed. The percentage of fat ranges from 14.55 to 33.31, the cane sugar from 39.45 to 56.48, and the milk sugar from 2.25 to 8.46. Strictly speaking, a "milk" powder without other qualification should indicate one made from whole milk. As a matter of fact, however, certain manufacturers use a skim milk product, virtually dried casein and milk sugar, while others use powders from which more or less of the milk fat has been extracted. The Reichert-Meissl number of the fat of sweet chocolate indicates with some degree of accuracy the amount of milk fat present. This value in cocoa fat is very low, from 0.2 to 0.4, and in this connection may be disregarded; the Reichert-Meissl number of milk fat, however, averages about 24. The following Reichert-Meissl numbers were obtained by the writer in the sweet chocolates listed in the table:

| | | |
|---|---|---|
| Achor ..... 7.0 | Huyler ..... 3.2 | Stollwerck... 3.7 |
| Cailler ..... 6.2 | Nestlé ..... 5.6 | Suchard .... 5.1 |
| Hershey .... 5.9 | Peter ..... 4.1 | Wilbur ..... 5.8 |
| Hooton ..... 5.0 | Pulver ..... 3.7 | |

These figures would indicate that from 13 to 29 percent of the fat in the sweet chocolates was derived from milk.

TABLE III

The cocoas show wide differences in composi-

TABLE I—ANALYSES OF CHOCOLATE

| Brand | Ash | | | Alkalinity of ash | | Fat | Nitrogen | Soluble in water | | | Organic matter soluble in cold water | Relative sedimentation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total | Soluble in water | Insoluble in acid (sand) | Per gram of chocolate | Per gram of ash | | | Cold | At 65° C. | At 100° C. | | |
| *Plain Chocolate* | | | | | | | | | | | | |
| W. H. Baker's Premium Chocolate No. 1 | 2.91 | 1.11 | 0.03 | 3.29 | 113 | 51.20 | 2.09 | 12.68 | 14.70 | 16.18 | 11.57 | 48 |
| Brewster's Premium Plain Chocolate | 3.76 | 1.66 | 0.10 | 4.19 | 111 | 47.90 | 2.29 | 14.00 | 15.68 | 17.56 | 12.34 | 48 |
| Huyler's Baking and Cooking Chocolate | 3.39 | 1.41 | 0.18 | 4.10 | 120 | 49.74 | 2.35 | 13.12 | 14.20 | 15.92 | 11.71 | 50 |
| Lowney's Premium Chocolate | 3.21 | 1.24 | 0.21 | 3.63 | 113 | 51.04 | 2.31 | 11.02 | 12.74 | 14.80 | 9.78 | 46 |
| Maillard's Premium Chocolate | 2.94 | 1.18 | 0.05 | 3.58 | 122 | 52.35 | 2.24 | 11.04 | 13.26 | 14.38 | 9.86 | 45 |
| Mohican Plain Premium Chocolate | 3.69 | 1.61 | 0.08 | 4.42 | 120 | 49.13 | 2.34 | 12.90 | 13.98 | 16.70 | 11.29 | 58 |
| Runkel's Plain Premium Baking Chocolate | 3.26 | 1.34 | 0.07 | 3.78 | 116 | 50.46 | 2.29 | 11.94 | 13.46 | 15.70 | 10.60 | 51 |

tion, depending on the extent to which the cocoa fat is removed and on the process by which the cocoa is treated. The fat ranges from 19.50 to 31.37 percent, the ash from 4.58 to 9.03, and the alkalinity of the ash from 4.90 to 10.92. The amount of fat desirable in a cocoa is largely a matter of taste, and if within reasonable limits offers no cause for serious criticism. The quality most sought after in cocoa by dietitians is a less "hearty" drink than chocolate, a product with a lower fat content probably being more acceptable to a delicate stomach or one weakened by disease. It is evident, therefore, from a dietetic standpoint that too much fat in a cocoa may be quite as objectionable as too great a deficiency.

The point of chief interest, however, revealed by these analyses, is the variation in the ash and value, and consequently superior quality. As a result we find that certain manufacturers of cocoa made by the Dutch process take advantage of this popular error and in their advertisements assert that this darker color indicates greater strength and value than is possessed by cocoas of a lighter color, an assertion which, of course, is untrue. Naturally the alkaline carbonate possesses no food value and its use may seriously affect the aroma, flavor and palatability of the drink made from the cocoa in question. Another effect of the alkali is to produce a powder which may remain in suspension in water or milk for a longer time than untreated cocoa. This property has given rise to the fallacious term "soluble cocoa." There is, of course, no such thing as a soluble cocoa. In fifty-two analyses of cocoa made by the

TABLE II—ANALYSES OF SWEET AND MILK CHOCOLATE

| Brand | Ash | | | Alkalinity of ash | | Fat | Nitrogen | Cane sugar | Milk sugar | Soluble in water | | | Organic matter, not sugar, soluble in cold water | Relative sedimentation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total | Soluble in water | Insoluble in acid (sand) | Per gram of chocolate | Per gram of ash | | | | | Cold | At 65° C. | At 100° C. | | |
| *Sweet Chocolate* | | | | | | | | | | | | | | |
| Austin, Nichols & Co.'s Anco Sweet Chocolate... | 1.22 | 0.60 | 0.03 | 1.53 | 125 | 24.37 | 0.88 | 58.31 | 0 | 63.38 | 63.34 | 64.52 | 4.47 | 70 |
| Baker's Sweet Chocolate Cinquième..... | 1.34 | 0.69 | 0.02 | 1.55 | 116 | 27.90 | 0.90 | 55.09 | 0 | 59.42 | 60.20 | 61.26 | 3.64 | 47 |
| Baker's German's Sweet Chocolate..... | 1.12 | 0.60 | 0.04 | 1.32 | 118 | 28.05 | 0.81 | 55.67 | 0 | 60.16 | 60.38 | 61.34 | 3.89 | 45 |
| Baker's Dot Sweet Chocolate..... | 1.68 | 0.78 | 0.04 | 2.06 | 123 | 41.19 | 1.21 | 34.55 | 0 | 41.12 | 41.96 | 42.90 | 5.79 | 41 |
| Huyler's Vanilla Sweet Chocolate..... | 1.13 | 0.56 | 0.05 | 1.38 | 122 | 23.35 | 0.73 | 63.05 | 0 | 67.50 | 66.78 | 67.82 | 3.89 | 51 |
| Knickerbocker Barker's Hasty Lunch Chocolate.. | 2.18 | 0.88 | 0.03 | 2.22 | 102 | 11.22 | 1.61 | 55.53 | 0 | 64.58 | 65.56 | 66.98 | 8.17 | 79 |
| Lowney's Vanilla Sweet Chocolate..... | 0.99 | 0.71 | 0.05 | 1.15 | 116 | 26.60 | 0.67 | 59.28 | 0 | 63.84 | 64.26 | 65.66 | 3.85 | 47 |
| Meiner's Chocolat Sauté Vanilla..... | 1.58 | 0.79 | 0.05 | 1.75 | 111 | 21.90 | 0.98 | 59.39 | 0 | 65.05 | 64.86 | 65.52 | 4.96 | 91 |
| Mohican Sweet Chocolate..... | 0.94 | 0.61 | 0.04 | 1.11 | 118 | 27.50 | 0.63 | 57.88 | 0 | 64.08 | 64.16 | 65.56 | 5.59 | 47 |
| Runkel's Vienna Sweet Chocolate..... | 1.06 | 0.61 | 0.02 | 1.29 | 122 | 20.14 | 0.74 | 62.86 | 0 | 69.40 | 69.44 | 70.68 | 5.93 | 67 |
| Whitman's Instantaneous Chocolate..... | 1.61 | 0.77 | 0.05 | 1.84 | 114 | 24.60 | 1.11 | 54.21 | 0 | 59.94 | 60.06 | 61.54 | 4.96 | 85 |
| Whitman's Super Extra XXX Vanilla Chocolate.. | 1.26 | 0.92 | 0.05 | 1.51 | 120 | 31.78 | 0.63 | 53.01 | 0 | 59.06 | 59.46 | 60.02 | 5.13 | 38 |
| *Milk Chocolate* | | | | | | | | | | | | | | |
| Achor's Choco-Lactine ..... | 2.22 | .... | .... | 2.40 | 108 | 14.55 | 1.50 | 56.48 | 7.20 | ..... | ..... | 68.16 | .... | .. |
| Cailler's Genuine Swiss Milk Chocolate..... | 1.56 | 0.54 | 0.02 | 1.19 | 76 | 29.95 | 1.17 | 48.31 | 7.28 | 61.64 | 61.46 | 62.34 | 5.51 | 47 |
| Hershey's Milk Chocolate..... | 1.85 | 0.63 | 0.02 | 1.82 | 98 | 28.69 | 1.36 | 45.81 | 7.75 | 60.38 | 60.66 | 61.66 | 6.19 | 24 |
| Hooton's Jersey Milk Chocolate..... | 1.71 | 0.66 | 0.03 | 2.09 | 122 | 32.13 | 1.19 | 43.09 | 3.57 | 54.04 | 54.28 | 55.02 | 6.72 | 41 |
| Huyler's New Process Milk Chocolate..... | 1.67 | 0.85 | 0.01 | 1.93 | 116 | 28.77 | 1.11 | 49.45 | 2.25 | 59.26 | 58.94 | 59.58 | 6.71 | 62 |
| Nestlé's Swiss Milk Chocolate..... | 1.56 | 0.61 | 0.01 | 1.58 | 101 | 28.85 | 1.17 | 49.65 | 6.87 | 65.78 | 64.43 | 63.52 | 8.65 | 28 |
| Peter's Milk Chocolate..... | 1.79 | 0.82 | 0.02 | 2.10 | 117 | 33.23 | 1.42 | 39.45 | 6.24 | 52.52 | 53.66 | 53.62 | 6.01 | 39 |
| Pulver Milk Chocolate..... | 2.12 | 0.83 | 0.04 | 2.49 | 117 | 26.84 | 1.44 | 44.26 | 8.46 | 62.09 | 61.24 | 61.44 | 8.54 | 44 |
| Stollwerck Gold Brand Milk Chocolate..... | 1.66 | 0.67 | 0.04 | 1.89 | 114 | 33.31 | 1.20 | 42.45 | 7.39 | 56.24 | 56.24 | 56.64 | 5.73 | 36 |
| Suchard Milka Chocolate au Lait Concentré..... | 1.60 | 0.53 | 0.04 | 1.92 | 120 | 32.67 | 1.29 | 42.64 | 7.81 | 57.98 | 58.14 | 58.46 | 7.00 | 38 |
| Wilbur's American Milk Chocolate..... | 2.25 | 0.92 | .... | 1.75 | 78 | 30.63 | 1.55 | 39.49 | 8.17 | 57.12 | 57.04 | 56.34 | 8.54 | 32 |

in its alkalinity. A number of the cocoas listed in the table are the so-called "soluble" cocoas made by the Dutch process. This process consists in treating the cocoa at some stage of its manufacture with an alkaline carbonate, generally potassium carbonate, although sodium, ammonium and magnesium carbonates are sometimes used. The amount of carbonate added varies from 1.5 to 5 percent, but is generally about 2 percent. The effect of this treatment with alkali is to change the color of the cocoa from a brown to a dark reddish color, the cocoa thus obtained making a much darker mixture with water than the untreated cocoa. There exists an incorrect popular belief that this darkness of color shows concentration of flavor and food

writer the average solubility in cold water was 19.40 percent and in boiling water 23.55 percent. It was also found that while in the treated cocoas 1.7 percent more of the total cocoa was soluble in boiling water than in the case of the untreated cocoas, over 3 percent less of the organic matter was soluble in cold water. In other words, the apparent slightly increased solubility was due to the added alkali and not to any change in the cocoa mass itself. On the average the "soluble" cocoas showed a lower water-solubility of the cocoa mass than those brands making no claim of superior solubility. The power of suspension of these "soluble" cocoas also is greatly exaggerated. By applying Howard's arbitrary, but strictly comparative, sedimentation test, in these same cocoas

TABLE III—ANALYSES OF COCOA

| Brand | Ash | | | Alkalinity of ash | | Fat | Nitrogen | Soluble in water | | | Organic matter, soluble in cold water | Relative sedimentation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total | Soluble in water | Insoluble in acid (sand) | Per gram of cocoa | Per gram of ash | | | Cold | At 65° C. | At 100° C. | | |
| Austin, Nichols & Co.'s Carmelo Breakfast Pure Cocoa | 5.01 | 2.04 | 0.24 | 5.61 | 112 | 26.45 | 3.40 | 17.88 | 19.92 | 21.78 | 15.84 | 101 |
| Austin, Nichols & Co.'s Sunbeam Pure Food Breakfast Cocoa | 5.49 | 2.05 | 0.01 | 5.98 | 109 | 20.20 | 3.93 | 19.88 | 21.94 | 24.66 | 17.83 | 101 |
| Walter Baker's Breakfast Cocoa | 5.25 | 2.00 | 0.13 | 5.85 | 111 | 27.92 | 3.53 | 17.36 | 19.88 | 21.36 | 15.36 | 104 |
| Walter Baker's Webb's Pure Cocoa Powder | 4.82 | 2.01 | 0.12 | 5.90 | 122 | 26.20 | 3.55 | 19.14 | 20.66 | 25.10 | 17.13 | 103 |
| Wm. H Baker's Justice Brand Cocoa | 5.24 | 1.96 | 0.27 | 5.91 | 113 | 26.02 | 3.47 | 18.86 | 20.40 | 22.72 | 16.90 | 102 |
| W. H. Baker's Best Cocoa | 4.59 | 1.72 | 0.17 | 5.47 | 119 | 29.67 | 3.19 | 18.02 | 20.28 | 21.86 | 16.30 | 90 |
| Beckmann's Best Breakfast Cocoa | 5.54 | 2.46 | 0.29 | 6.35 | 115 | 24.50 | 3.43 | 19.66 | 21.68 | 23.76 | 17.20 | 90 |
| Beresdorf's Royal Dutch Cocoa | 6.65 | 5.24 | 0.00 | 8.49 | 128 | 31.37 | 3.45 | 18.28 | 20.24 | 24.66 | 13.04 | 82 |
| Brewster's L. B. C. Cocoa | 5.25 | 3.11 | 0.14 | 6.20 | 118 | 24.45 | 3.48 | 20.58 | 22.54 | 24.38 | 17.47 | 91 |
| Brewster's Royal Breakfast Cocoa | 4.58 | 2.61 | 0.03 | 4.90 | 107 | 28.95 | 3.21 | 19.02 | 21.70 | 23.38 | 16.41 | 85 |
| Brewster's Savoy Breakfast Pure Cocoa | 5.29 | 2.08 | 0.19 | 6.10 | 115 | 23.32 | 3.43 | 19.32 | 22.28 | 23.74 | 17.24 | 98 |
| Clark, Chapin & Bushnell's Swan Brand Breakfast Cocoa | 4.82 | 1.77 | 0.17 | 5.75 | 119 | 26.67 | 3.45 | 18.96 | 21.26 | 22.74 | 17.19 | 93 |
| Depew's Welcome Dainty Brand Cocoa | 5.49 | 2.88 | 0.09 | 6.57 | 120 | 24.85 | 3.67 | 19.36 | 21.54 | 23.04 | 16.48 | 102 |
| Hooton's Amazon Breakfast Cocoa | 5.23 | 2.23 | 0.10 | 6.10 | 117 | 24.60 | 3.66 | 19.26 | 21.28 | 22.86 | 17.03 | 102 |
| Huyler's Cocoa | 4.99 | 2.10 | 0.18 | 5.84 | 117 | 27.21 | 3.39 | 18.02 | 19.64 | 21.50 | 15.92 | 94 |
| Ideal Old Dutch Pure Soluble Breakfast Cocoa | 9.03 | 7.18 | 0.02 | 10.92 | 121 | 21.65 | 3.45 | 21.36 | 22.95 | 26.58 | 14.18 | 90 |
| Leggett's Nabob Breakfast Cocoa | 6.21 | 4.60 | 0.06 | 7.29 | 117 | 19.56 | 4.07 | 20.28 | 22.60 | 26.24 | 15.68 | 96 |
| Lowney's Breakfast Cocoa | 5.49 | 3.02 | 0.20 | 6.18 | 113 | 21.41 | 3.79 | 19.38 | 21.32 | 22.64 | 16.36 | 101 |
| Maillard's Breakfast Cocoa | 5.04 | 1.97 | 0.06 | 6.07 | 120 | 25.65 | 3.64 | 18.86 | 20.56 | 22.08 | 16.89 | 100 |
| Melbourne Australian Brand Breakfast Cocoa | 5.69 | 2.10 | 0.32 | 6.10 | 107 | 24.46 | 3.47 | 20.12 | 22.34 | 24.00 | 18.02 | 100 |
| Mohican Brand Cocoa | 5.53 | 2.47 | 0.15 | 6.14 | 111 | 23.12 | 3.43 | 22.64 | 24.85 | 26.66 | 20.17 | 99 |
| Powell's Breakfast Cocoa | 5.09 | 2.17 | 0.07 | 6.30 | 122 | 22.00 | 3.68 | 18.78 | 21.32 | 22.86 | 16.61 | 102 |
| Pulver's Breakfast Cocoa | 5.95 | 2.86 | 0.37 | 7.04 | 118 | 20.90 | 3.58 | 20.12 | 22.22 | 24.62 | 17.26 | 101 |
| Rockwood's Semper Idem Breakfast Cocoa | 4.93 | 2.08 | 0.17 | 6.04 | 122 | 26.27 | 3.46 | 19.76 | 22.20 | 24.36 | 17.68 | 95 |
| Runkel's Pure Breakfast Cocoa | 5.38 | 2.30 | 0.15 | 6.46 | 120 | 25.89 | 3.62 | 18.64 | 20.68 | 22.06 | 16.34 | 100 |
| Seeman's White Rose Brand Cocoa | 5.97 | 2.22 | 0.34 | 5.83 | 98 | 23.76 | 3.61 | 18.34 | 20.30 | 22.20 | 16.12 | 105 |
| Stollwerck's Cocoa | 5.96 | 3.65 | 0.08 | 7.40 | 124 | 26.07 | 3.63 | 18.64 | 20.32 | 23.72 | 14.99 | 90 |
| Suchard's Soluble Cocoa | 6.44 | 4.53 | 0.01 | 8.12 | 126 | 31.28 | 3.29 | 17.46 | 18.74 | 23.10 | 12.93 | 82 |
| Van Dyk's Ambassador Brand Breakfast Cocoa | 4.86 | 1.80 | 0.05 | 5.45 | 112 | 25.40 | 3.53 | 20.20 | 22.76 | 23.62 | 18.40 | 90 |
| Van Houten's Pure Soluble Cocoa | 8.07 | 6.55 | 0.01 | 10.55 | 131 | 28.49 | 3.38 | 19.12 | 20.46 | 22.30 | 12.57 | 74 |
| Ziegler's Breakfast Cocoa | 7.09 | .... | .... | 6.70 | 94 | 22.20 | 3.44 | ..... | ..... | 22.20 | ..... | ... |

it was found that the average sedimentation number for the untreated cocoas was 96, while that for the treated was 87, only a little less.

TABLE IV

In the compound cocoas we find most variable analytical data. The fat ranges from 7.60 to 30.85, the ash from 1.80 to 5.44, and the cane sugar from 15.25 to 63.25 percent. It would seem, generally speaking, that it would be better economy for the consumer to make his own addition of sugar to ordinary cocoa, rather than to pay the manufacturer a cocoa price for sugar.

*Health Koko,* made by the Kellogg Food Co., claims that the theobromin has been removed. The sample analyzed contained but 0.14 percent of theobromin and caffein, about one-tenth the amount found in ordinary cocoa. It is difficult to say whether the theobromin has actually been removed in large part, or whether the apparent reduction is due, at least in part, to the "nuts, maltose and sugar," which, according to the label, are ingredients of the compound.

TABLE IV—ANALYSES OF COMPOUND COCOA

| Brand | Ash | | | Alkalinity of ash | | Fat | Nitrogen | Cane sugar | Milk sugar | Soluble in water | | | Organic matter, not sugar, soluble in cold water | Relative sedimentation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total | Soluble in water | Insoluble in acid (sand) | Per gram of cocoa | Per gram of ash | | | | | Cold | At 65° C. | At 100° C. | | |
| Bartlett's Admiral Sweet Cocoa | 2.94 | 2.18 | 0.02 | 3.77 | 128 | 7.73 | 1.42 | 61.80 | 0 | 70.28 | 70.78 | 72.08 | 6.30 | 110 |
| Bartlett's Ralston Health Club Cocoa | 3.11 | 2.27 | 0.01 | 3.98 | 128 | 12.60 | 1.60 | 55.07 | 0 | 65.26 | 65.76 | 67.54 | 7.92 | 100 |
| Croft's Swiss Milk Cocoa | 4.71 | 1.84 | 0.26 | 5.44 | 115 | 22.06 | 2.86 | 15.25 | 1.25 | 31.30 | 32.48 | 34.28 | 12.96 | 103 |
| Kellogg's Health Koko | 1.80 | .... | .... | 2.30 | 128 | 17.55 | †2.70 | 26.77 | .... | ..... | ..... | 31.50 | ..... | ... |
| Melbourne Empire Brand Compound Lunch Cocoa | 2.62 | 1.88 | 0.03 | 3.35 | 128 | 7.60 | 1.30 | 63.25 | 0 | 72.24 | 73.40 | 75.24 | 7.11 | 109 |
| New Jersey Choc. Works' Best Lunch Cocoa | 2.06 | 1.14 | 0.08 | 2.60 | 126 | 12.33 | 1.45 | 54.95 | 0 | 64.64 | 65.80 | 67.06 | 8.55 | 100 |
| Phillips' Digestible Cocoa | 3.68 | 2.38 | 0.04 | 3.82 | 104 | 30.85 | 2.45 | 21.98 | 0 | 32.84 | 33.88 | 35.46 | 8.48 | 115 |
| Stollwerck's Milk Cocoa | 5.44 | 2.01 | 0.05 | 6.30 | 116 | 20.92 | 3.89 | * | * | 31.02 | 32.64 | 32.88 | ..... | 85 |
| Theinhardt's Hygiama | 3.54 | .... | .... | .... | ... | 10.03 | ‡3.24 | ¶47.07 | .... | ..... | ..... | ..... | ..... | ... |

*Polarized @ 21° C. + 6.0 direct and + 6.16 after inversion.
†0.13% theobromin and caffein.
‡0.05% theobromin and caffein.
¶Total soluble carbohydrates.

*Hygiama* makes no claim as to theobromin, but analysis shows that it contains only 0.05 percent of the combined alkaloids. This compound is essentially a partially defatted cocoa containing about 47 percent of sugars.

TABLE V

Certain brands of chocolate and cocoa are specially recommended for the use of the diabetic,

thereby implying at least a considerable reduction in carbohydrates (starches and sugar). In certain brands a considerable reduction is effected by the use of casein or other protein preparations. In many instances, however, the reduction of carbohydrates, if any, is slight, and the diabetic pays a greatly advanced price for articles scarcely better suited to his needs than ordinary chocolate and cocoa. In some brands of cocoa there is an actual addition of cereal starch, which apparently in no way interferes with the manufacturers specially recommending them for diabetics. In comparing the analyses of these products with those of the ordinary brands the reader should remember that on the average plain chocolate contains 25 percent of nitrogen-free extract, cocoa 38 percent, milk chocolate 51 percent, and sweet chocolate 67 percent.

Table v—Analyses of "Diabetic" Chocolate and Cocoa

| Brand | Water | Ash | Protein (N + 6.25) | Fiber | Nitrogen-free extract | Ether extract (fat) | Starch | Reducing sugar as invert | Polarization @ 20° C. Direct | Polarization @ 20° C. After inversion |
|---|---|---|---|---|---|---|---|---|---|---|
| *Chocolate* | | | | | | | | | | |
| Brusson Chocolat with added Gluten à la Vanille | 2.6 | 3.2 | 15.9 | 2.2 | 26.4 | 49.7 | 9.2 | * 1.5 | + 2.6 | + 0.0 |
| Fromm's Conglutin-Diabetiker Schokolade | 4.0 | 5.4 | 17.6 | 1.2 | 32.7 | 39.1 | 4.3 | *15.2 | + 4.3 | + 5.2 |
| Goldscheider's Dessert-Schokolade für Diabetiker | 2.2 | 1.8 | 11.4 | 1.7 | 25.3 | 57.6 | 5.0 | 11.0 | ..... | ..... |
| Goldscheider's Mocca-Schokolade für Diabetiker | 2.2 | 2.3 | 10.2 | 1.7 | 23.4 | 60.2 | 4.1 | 10.0 | ..... | ..... |
| Goldscheider's Nuss-Schokolade für Diabetiker | 3.4 | 2.7 | 14.6 | 1.7 | 23.2 | 54.4 | 6.9 | 7.3 | ..... | ..... |
| Goldscheider's Orange-Schokolade für Diabetiker | 2.4 | 2.2 | 11.4 | 1.4 | 25.0 | 57.6 | 5.0 | 11.2 | ..... | ..... |
| Groetzsch's Essschokolade | 4.6 | 2.3 | 10.8 | 4.4 | 17.2 | 60.7 | 12.0 | ..... | ..... | ..... |
| Groetzsch's Kochschokolade | 10.9 | 6.7 | 25.3 | 5.9 | 26.1 | 25.1 | 15.9 | ..... | ..... | ..... |
| Plasmon Chocolate | 3.5 | 2.5 | 20.2 | 0.7 | 48.0 | 25.1 | 2.4 | †41.0 | +41.6 | —13.3 |
| Rademann's Diabetiker-Chokolade | 2.5 | 3.2 | 17.5 | 2.3 | 16.9 | 57.6 | 3.8 | * 1.9 | + 2.6 | + 0.0 |
| Sanity Laevulose Schokolade | 4.0 | 3.0 | 11.4 | 2.6 | 35.6 | 43.4 | 6.2 | 17.6 | — 5.0 | — 5.0 |
| Sanity Mandel- u. Nussschokolade | 3.1 | 2.6 | 12.0 | 2.2 | 26.2 | 53.9 | 4.3 | 14.3 | — 3.0 | — 4.0 |
| Sanity Manit-Chocolate | 4.2 | 2.5 | 10.0 | 1.7 | 37.9 | 43.7 | 4.8 | 21.3 | — 6.4 | — 6.6 |
| Tropon-Chocolade | 1.7 | 1.6 | 18.2 | 2.7 | 49.9 | 25.9 | ? | ..... | ..... | ..... |
| *Cocoa* | | | | | | | | | | |
| Charrasse Gluto-Cacao | 6.4 | 6.7 | 21.5 | 3.1 | 40.1 | 22.2 | 16.3 | * 1.7 | + 2.6 | + 0.0 |
| Dieto Cocoa | 4.3 | 5.4 | 23.6 | 4.9 | 38.9 | 22.9 | 12.4 | ..... | + 1.5 | + 0.0 |
| Jireb Diabetic Cocoa | 7.3 | 3.9 | 19.1 | 3.4 | 47.9 | 18.4 | much | ..... | ..... | ..... |
| Plasmon Cocoa | 8.9 | 6.6 | 52.8 | 20.9 | | 10.8 | 5.1 | ..... | + 0.0 | + 0.0 |
| Rademann's Diabetiker-Cacao | 5.2 | 5.9 | 17.6 | 3.0 | 44.7 | 23.6 | 10.7 | * 1.4 | + 0.9 | + 0.0 |

### FALSE CLAIMS OF THE MANUFACTURER

Cocoa is not commonly adulterated at the present time, and it is unfortunate that many manufacturers still feel that they must resort to exaggeration and misrepresentation in order to sell their product. Without mentioning the specific brands, the following false claims were found on the labels of certain cocoas listed in our tables; the purchaser who believes all he reads on the average cocoa label is foolish indeed:

"Owing to the removal of oil, it is certainly the most nutritious and wholesome cocoa now manufactured in the world." As a matter of fact, this brand contained more oil than most of the cocoas analyzed, and it is by no means the "most nutritious."

"Triple the strength of cocoa as usually prepared. Preserving in their entirety—the nutritive properties of the natural bean." Both statements are obviously untrue.

"Acknowledged by the leading authorities to be absolutely the purest cocoa made." This is untrue, as it contains a large excess of added alkali.

"Soluble and digestible." Both statements are incorrect.

"Cocoa is stronger and more economical than chocolate," the reverse of which is, of course, true.

"Double the strength of ordinary grades of cocoa." Obviously untrue.

"Soluble," "most of the cocoa butter has been eliminated," "free from alkali." This cocoa is not soluble, it contains more cocoa butter than most brands, and it contains free alkali, showing that all three claims are false.

"Milk cocoa." The Reichert-Meissl number indicates the presence of no milk fat.

"Instantly soluble in hot water," "perfectly digestible," "unrivalled as a brain and nerve food." These statements are all false and misleading.

**Wonderful Record of French Red Cross.**

The expenditures of this society from August, 1914, to June 1, 1915, amounted to more than $4,000,000. The "Société Francaise de Secours aux Blessés Militaires," one of the three societies composing the French Red Cross, had organized in these ten months 773 auxiliary hospitals, representing 70,000 beds; 93 first-aid posts, 88 infirmaries, and 45 railway canteens.

St. John's Lutheran Hospital, St. Paul, Minn., is occupying a new building, erected at a cost of $60,000.

The MODERN HOSPITAL

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Contributors, subscribers, and readers will find important information on advertising page 34.

## The Hospital's Responsibility

For a long time THE MODERN HOSPITAL has preached about the responsibility of the hospital for whatever mistakes or accidents occur on its premises, no matter whether due to poor technic, unwise orders by physicians, mistakes made by nurses or interns, or what not. A case in point has just occurred to emphasize the point:

Recently a woman patient in one of the hospitals in New Haven, Conn., died on the operating table while chloroform was being administered preparatory to an operation. The coroner was notified, the newspapers published long accounts under scare heads, and many physicians were interviewed about chloroform as an anesthetic. Some of these physicians censured the hospital, at least by inference, for using chloroform instead of ether or nitrous oxide.

The hospital has said nothing—how could it, without taking sides against one of its doctors, or even against the whole staff?

Hospitals, that is, administrators and trustees, do not prescribe the anesthetic to be used. Surgeons, as a rule, prescribe the anesthetic, excepting in those institutions that have a definite technic in regard to anesthetics, and in those cases the technic is created at the instance of the surgical staff, and the details are specified in rules created by the staff.

There is no doubt that chloroform, in this New Haven hospital, was prescribed by the staff as a whole, or by the individual surgeon in this case; it was being administered by an intern under the surgeon's eye. The anesthetic in the operating suite does not come under the administrative department of the hospital, and in most hospitals the surgeons would resent any interference with the anesthetic routine by an administrative officer or by the board of trustees.

And yet here is a hospital whose reputation is assailed by the coroner of the community, by the newspapers, and by the public, for a mishap over which the administrator could have had no control.

The moral is that hospitals *are responsible* for the service they give to the sick, and, as in the case at issue, no explanation will serve to void that responsibility.

The cure is for trustees to be very careful in the selection of their medical staff, and to watch their work after they are appointed. They can do this through their superintendent, and by means of the records of the operating rooms and the records of patients.

Physicians very often argue in favor of a special technic of their own; that they, and not the hospital, are responsible, and that therefore they should have things their own way. Here is a case that demonstrates conclusively that when an accident occurs, the hospital, and not the physician, bears the brunt of the criticism.

Patients will continue to die under the anesthetic, no matter whether it is chloroform, or ether, or gas that is used. But there are some pretty well defined principles involved in the anesthetic, and the hospital administrator and the board of trustees should recognize that whether they would have it so or not, the hospital will have to bear the brunt of the criticism whenever an accident occurs; and they should therefore insist upon having at the least a veto power over the establishment of a technic in any department, and on the physical direction of all the operations, including the personnel.

## Surgical Team Work in the Hospital

In other pages of this issue will be found an address delivered by Dr. Noah R. Harlan before the staff of the Freeport (Ill.) General Hospital, on "Surgical Team Work in the Hospital."

Dr. Harlan's address contains much food for thought and must be of deep interest not only to surgeons operating in hospitals but to hospital administrators. Dr. Harlan pictures a very beautiful piece of technical service for the operat-

ing suite in the modern hospital, and without any question, his demand that the operating surgeon shall dominate the atmosphere of the suite during the time of the operation on his patient, we all agree to; and his arrangement and the duties of the individuals, each forming a cog in the technical machinery, must appeal to us; but the question comes up about the elaboration of the machinery. Do we need so many people as Dr. Harlan demands? Nine persons seem a great many to participate in an appendectomy, for instance.

At the meeting of the American Medical Association held in Atlantic City in June, 1914, and in a joint symposium of the section on surgery and that on hospitals, the writer of this editorial, in discussing the problem of surgical technic in the modern hospital, insisted that hospital technic was growing top-heavy, and that the technic demanded by surgeons was growing so intricate and complex that instead of becoming more perfect as time went on, it was obviously becoming more difficult and more unwieldy. The writer suggested in that discussion, that since almost all radical progress in institutional medicine had dated from some great war, it would probably take another great war to bring the surgical profession back to fundamental principles and to a simplified technic. Six weeks later the great world war broke out of a clear sky, and one of the most impressive features of that war up to date has been the handling of the sick and wounded, necessarily under a technic of the most radically simple sort.

There is no doubt that in the present war the vast majority of the major surgical operations are being performed by one surgeon, assisted by an orderly and with an anesthetist as the only other participant. Great numbers of our American surgeons have been participants in the surgery of the war, and let us hope that they will return home imbued, not only with the necessity for simplifying surgical technic, but with a feeling that every desirable surgical end can be achieved in a very greatly simplified technic, employing the service of at most: (1) the surgeon, (2) a surgical assistant, (3) a nurse and (4) the anesthetist. There may be in addition a "supe" nurse, to get things and take away things for the operating force.

If we are to carry along our burdensome technic in the operating department, merely for the purpose of giving opportunity for the training of more interns and more nurse pupils, that is one thing, but if our surgeons feel that their work absolutely demands nine persons to participate in an appendectomy, it seems likely that the present war ought to be an instance of disillusionment in this respect.

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### Dr. Goldwater's Retirement

Dr. S. S. Goldwater, after a service of less than two years as health commissioner of New York City, has retired from that office to resume the active administration of Mount Sinai Hospital.

It is fitting that THE MODERN HOSPITAL should recognize and comment upon Dr. Goldwater's retirement, for several reasons:

First, because for the first time in this country a hospital administrator has taken up the duties of health officer of a great city;

Second, because Dr. Goldwater brought into the service of the city of New York an experience and training and initiative that not only did him personally a very great credit, but brought a reflected credit upon hospital administrators everywhere;

Third, because THE MODERN HOSPITAL, of which Dr. Goldwater is one of the editors, is extremely proud of the record he has made in one of the highest and most responsible offices in the gift of the largest, richest and most influential community in this country. And it may be added that what is the loss of New York City, in the retirement of Dr. Goldwater, is to be the gain of the readers of THE MODERN HOSPITAL, because Dr. Goldwater, who has been silent in so far as editorial service for THE MODERN HOSPITAL was concerned during these two years, has begun to take up, not only active hospital work in his own institution, but the fight for better hospital conditions, better hospital architecture and a better national atmosphere concerning hospitals, and all that relates to them, through the columns of THE MODERN HOSPITAL. Coincident with this announcement of Dr. Goldwater's retirement, THE MODERN HOSPITAL presents, as a feature article, the story of the St. Louis Children's Hospital, for which Dr. Goldwater is consultant.

During his two years' incumbency of the office of health commissioner of New York City, Dr. Goldwater has initiated some notable advances in public health service. Pages would not suffice even to mention the items of public health advancement that he initiated and brought to practical development; but a few of these items are especially worth singling out, since, in the judgment of this writer, these items mark definite epochs in this era that concerns so vitally the problems of the public health.

To my own mind the most notable thing that Dr. Goldwater's regime created was the introduction, as routine practice, of the medical examina-

tion of industrial employees. With characteristic vigor and originality he initiated this new public health service in his own department of the city government and offered himself as the first subject for examination. That movement grew and has continued to grow, until literally thousands of industrial organizations are offering free, periodic medical examinations to their employees, and the incident medical advice and treatment when these employees are found to be afflicted with the initial forms of any disease likely to continue and grow. This service means an immense increase in the efficiency of the people; it will add to longevity and vastly increase human comfort and happiness.

Perhaps the creation of a bureau of public health education under a director, for the furtherance of organized effort to improve the conditions in the health of the people, might be classified as a part of the propaganda noted above; and likewise, the insistence upon a more vigorous and universal examination of school children. These three items, going hand in hand, must have great and lasting influence on the public health of this country.

Perhaps the next most important thing that Dr. Goldwater's administration did was to impress indelibly upon the public the fact that mental, moral and physical health are the most important concern of present-day civilization. Specifically to emphasize this point he brought the public utilities corporations of New York City upstanding, and compelled them to furnish hygienic and sanitary means of transportation for the people.

He ended for all time the lucrative vulture practices of the charlatans and quacks who had been creating large fortunes by playing upon the susceptibility of young people concerning their sexual functions; he likewise did more than any other and perhaps all other agencies combined to destroy the patent medicine industries, by compelling these vicious vendors to label their products with their chemical contents.

Perhaps the next most important thing that Dr. Goldwater did was incident to his campaign against alcoholism; those of us who are not prohibitionists and faddists on the subject must realize that this country, like almost every civilized country in the world, has been fast approaching a deplorable state in regard to the consumption of alcohol. Dr. Goldwater did not go to the limit demanded by the prohibitionists, but he did much to create a sane and sound mental appreciation on the part of the public as to where alcohol properly belonged. There is no doubt in the world, and the medical profession is almost unanimous on the point, that alcohol in its various forms has a definite and fixed place in civilized life, and Dr. Goldwater did more than almost any other agency to define that place.

One of the minor, and yet one of the most important, achievements of Dr. Goldwater's administration was the settlement of the problem of disinfection and fumigation as a part of municipal health service. We had been blundering along for years, fumigating after the infectious diseases in a routine and wholly inefficient way. Dr. Goldwater did the scientific work necessary to demonstrate the fact that fumigation as it was being practiced all over this country is worthless, and that soap and water and cleanliness had more to do with the destruction of the foci of the communicable diseases than all the gas fumigants and hot air ever contrived.

And last of all, and by no means the least of Dr. Goldwater's services to the city of New York, was the demonstration of what a public health officer should be, and of the necessity that such officer should be divorced from and entirely away from political influences and intrigue.

Thousands of vicious elements, with whose business Dr. Goldwater interfered, will be glad that he has gone; but fortunately, Mayor Mitchel permitted Dr. Goldwater to develop a logical successor to himself, and unless all the signs fail, Dr. Haven Emerson, who was deputy commissioner and sanitary superintendent under Dr. Goldwater, will follow in the latter's footsteps and give a real public health administration to the metropolis of this country.

JOHN ALLEN HORNSBY.

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### Mental Therapy in the Hospital

The most progressive members of the medical profession are turning their attention more than ever to the influence of the mind over the body, and are applying this principle at the bedside, and in the wards of the hospitals.

We all know that the strong hold of Christian Science on the people is due to the practice of mental suggestion; we know, however, that Christian Scientists have gone far beyond all reason in their claims, and that they are doing some very foolish things—some things highly hurtful to their patients, because they have allowed their one idea of mental suggestion to dominate all their activities. We know perfectly well that mental suggestion never healed a broken bone or removed a tumor.

But the medical profession has been taking a lesson from the Christian Scientists, and while Charcot and a great school of medicine have

known about and have practiced mental suggestion, hypnotism and the like for many years, our modern medical thinkers have got farther than they, because these latter students have had the benefit of modern medical science and the consequent ability to make for better diagnosis of disease.

These thoughts would be rather outside the realm of THE MODERN HOSPITAL, except that there is a hospital angle to the practice of mental therapy, to which we should pay some heed. We refer to mental suggestion from the standpoint of interns, nurses, heads of departments and the administrative head of the institution.

Patients coming to the hospital are always anxious about themselves, and their friends are anxious about them. Any little word of encouragement to a sick person, coming from an intern or a nurse, goes a long way. How eagerly the patient watches the expression of the nurse as she scans the thermometer scale, after the temperature is taken! We have known the whole attitude of a patient to be changed by the nurse's humming of a few bars from some cheerful song, just at a moment when something has occurred to frighten the patient about herself.

It isn't necessary to iterate and reiterate assurances that the patient is doing well and is going to recover; patients distrust too much protestation; but a mere assumption on the part of the nurse or intern that the case is going to end happily has great weight; some little suggestion about something that can be done "after you go home" means more to an anxious sick person than all the frank promises of recovery that were ever given.

The point to be made is that the hospital can greatly aid the doctor in the practice of mental therapy, and that is quite as important a duty as to nurse the patient well or give her good food or other attention.

## American Health Progress

The American people are constantly praising themselves for their leadership and for their initiative and for their up-to-dateness in everything that makes for social and civic progress; they send missionaries abroad to teach "less fortunate" peoples how the great American nation does things; and they thank God—in fact, if not in so many words—that they "are not as other people are," as they set the halo on their heads more firmly.

Read what Dr. St. Clair Drake, executive secretary of the Illinois State Board of Health, has to say about how Springfield, Ill., "rose to the occasion."

The report of the public health survey of Springfield, made something over a year ago by Franz Schneider, Jr., as part of the general social survey of the capital city, conducted by the Russell Sage Foundation, has just been distributed in the form of an illustrated book of about 160 pages.

This report contains details of an investigation of practically every phase of sanitary conditions and public health administration and work in Springfield, together with the results of the tuberculosis survey made by Dixon Van Blarcom, field secretary of the National Association for the Study and Prevention of Tuberculosis, and the study of the milk protection and dairy conditions carried out by the State Board of Health.

One of the interesting features of this report not ordinarily found in such documents is the comparison of the city's sanitary conditions of the present with those of the past. This is made possible on account of the fact that Springfield has already had one sanitary survey which, in certain features, is said to have been the most thorough to have been made up to that time in any American community. This was the investigation of water supply, sewage disposal, shallow wells, vaults and other sanitary conditions conducted in 1911 by the Springfield Health Department under the jurisdiction of Dr. George Thos. Palmer.

While extending into many other fields Mr. Schneider's report covers some lines pursued in the 1911 survey, and the unfortunate fact is set forth by Mr. Schneider that while Springfield has been conversant with its sanitary faults for a period of four years, these conditions have not been remedied to any considerable extent.

Now read the last paragraph over again.

## WILLARD PARKER MOURNS ITS PRESIDENT

### Resolutions Express Regret and Sympathy on Death of Dr. John H. Huddleston

At the regular meeting of the Willard Parker and Riverside Hospitals, New York, held at the Willard Parker Hospital on November 9, 1915, it was unanimously

RESOLVED, That the Medical Board has learned with profound regret of the untimely death on October 30, 1915, of its president, Doctor John H. Huddleston. By his death the board has been deprived of an ideal presiding officer—a man of judicial temperament, pleasing personality and broad knowledge of the great work in which these hospitals are engaged.

RESOLVED, That the medical board feels that the death of Doctor John H. Huddleston is a great loss to modern medical science and sanitation. Not only was he possessed of exceptional attainments, but he unselfishly devoted his energies, time and interest to the furtherance of all practical measures for the advancement of the public good in these fields.

RESOLVED, That the members of the medical board mourn the loss in his death of a dear colleague, ever kind and courteous and sincerely attached to all of them, not only officially, but by close ties of personal friendship.

RESOLVED, That we offer to the family of Doctor Huddleston our deep sympathy and condolence in their affliction and express the hope that they will find some comfort in the consciousness of the profound respect and sincere esteem which Doctor Huddleston inspired in his colleagues and in the remembrance of his great usefulness to his fellowmen in the important activities which he so well and so thoroughly performed; and furthermore be it

RESOLVED, That these resolutions be spread upon the minutes of this meeting and that copies be transmitted to the family of the deceased and to the medical press of this city.

DR. JOHN W. BRENNAN,
DR. HENRY W. BERG,
For the Medical Board.

Dr. F. C. Levine, New Philadelphia, O., will head a private sanitarium soon to be opened at that place.

## THE PROBLEM OF BED-PAN COVERS

**How Some Good Hospitals Meet a Perplexing, Annoying and Disagreeable Duty—No Standard Method and No Commercial Device Offered**

### A SYMPOSIUM

So fundamental and apparently simple a problem as a covering for bed pans in transit has not yet been solved. A number of inquiries have recently come to THE MODERN HOSPITAL, asking about a bed-pan cover that would meet all the requirements, and the subject was deemed of sufficient importance to justify a little symposium.

We, therefore, sent out inquiries to a few good hospitals, and below are published some of the replies, which, by the way, are not very satisfying.

It is recognized that the following conditions must be met in a bed-pan cover:

1. It must be sterilizable.
2. It must be practically noiseless.
3. In proportion as it prevents the diffusion of odors along corridors, it will be the more acceptable.
4. It must be always available; hence must be of such physical character that it can be kept nearby, but out of the way.
5. It must not be unsightly.
6. It must be easily carried and handled by the nurse, along with the pan itself.

### MASSACHUSETTS GENERAL HOSPITAL

We have been unable to find a suitable bed-pan cover. We have used towels and rubber dams stretched over wire frames and glued on. These were quiet, but not durable and not very sanitary. Recently we have been using a molded metal cover, nickel plated. These are easily kept cleaned, but they are noisy if dropped, and rattle. We should like to hear what others use.

JOSEPH B. HOWLAND,
Asst. Administrator.

### THE ROOSEVELT HOSPITAL

We use in this hospital a square piece of muslin for bed-pan covering, marked and laid aside for this special purpose.

CHAS. B. GRIMSHAW,
Superintendent.

### WESTERN PENNSYLVANIA HOSPITAL

Your letter in regard to transporting bed pans from the service rooms to the patients' rooms has been referred to me. I would say that we cover them with a square of ticking. I have never seen a metal box cover, but have had suggestions from physicians to that effect. However, I believe it would be noisy and very difficult to keep such a vessel sweet and clean. I would be glad to hear of any suggestions.

JESSIE J. TURNBULL,
Directress of Nurses.

### THE SOCIETY OF THE NEW YORK HOSPITAL

We make bed-pan covers of cotton cloth. They are about a yard square, and have a special mark to identify them. We have used this method for a great many years.

THOMAS HOWELL,
Superintendent.

### PRESBYTERIAN HOSPITAL OF CHICAGO

For bed-pan covers we use an 18x24-inch denim or ticking cover, at a cost of 1½c when using new material, and only the cost of the labor when using old material. The advantages are: cheapness, as they can be made mostly from old material; cleanliness, as they can be laundered daily; convenient for the nurses to handle, and for this reason they always use them; they are light and noiseless, and when kept clean they are not unsightly.

ASA BACON,
Superintendent.

### PHILADELPHIA GENERAL HOSPITAL

In the Philadelphia General Hospital we have squares of rubber similar to that used in making rubber blankets, which are of sufficient size to enable the nurse to take hold of both sides of the bed pan, thus insuring that the cover will be kept in place.

The objection, it seems, to the metal covering would be the inability to procure a tight-fitting cover. It might be possible to secure a pliable metal cover which would slide in a groove, somewhat similar to the doors of an old-fashioned heater.

It would be interesting to read the opinions of others on this subject.

J. C. DOANE,
Chief Resident Physician.

### UNION BENEVOLENT ASSOCIATION HOSPITAL

The question of the covering and protection of bed pans is one we feel has never yet been satisfactorily solved, and I shall be among the most grateful if you succeed in getting good suggestions.

We find that the heavy square of "factory" we now use (a *clean* one each time) is fairly satisfactory, as our distances are not great. The covers must be sufficiently large to envelop the pan entirely, and in case of very strong odors, a square of rubber sheeting is sometimes added.

Sorry not to be able to give you something better.

IDA M. BARRETT,
Superintendent.

### ST. BARNABAS HOSPITAL

In our old hospital building we are still using thick muslin covers, made especially for them, but in our large, new pavilion I designed the rooms so that between each two there is a toilet and bath, also the same off each ward, so that the sad spectacle of pans being conveyed through the halls has been eliminated; were I designing a medical wing I would place a sufficient number of sterilizing hoppers, so that excreta would not have to be taken long distances.

In my old hospital at Brooklyn we used a large rubber sheet over the muslin cover, and that seemed to serve all practical purposes.

HARRIET S. HARTRY,
Per G. J. H. Superintendent.

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### Charity Hospital of New Orleans

The admissions to this hospital have increased from 9,576 in 1909 to 16,742 in 1914; the cost of administration from $203,047 to $297,286. The editor of the New Orleans *Medical and Surgical Journal*, in commenting on the improved efficiency of the Charity Hospital, publishes the following table to prove further that the present administration is worthy of the highest commendation:

COMPARISON OF HOSPITAL COSTS—1914

| Hospital | No. Beds | Admissions | Bed Days | Per Capita |
|---|---|---|---|---|
| Bellevue Hospital | 1,379 | 42,185 | 495,108 | 1.75 |
| Louisville City Hospital | 450 | 4,510 | 76,285 | 1.74 |
| Boston City Hospital | 995 | 12,803 | 196,688 | 1.81 |
| Worcester City Hospital | .... | ..... | 97,475 | 1.62 |
| St. Louis City Hospital | 1,000 | 17,284 | 256,830 | 1.13 |
| St. Paul City Hospital | 715 | 5,765 | 162,156 | 1.07 |
| San Francisco City Hospital | 700 | 3,788 | 110,555 | 1.07 |
| New Orleans Charity Hospital | 1,074 | 16,742 | 327,632 | 0.86 |

# HOSPITAL, MEDICAL *and* SPECIAL MEETINGS

## Medical and Surgical Efficiency in Large General Hospitals[1]

FREDERIC A. WASHBURN, M. D., Resident Physician, and JOHN F. BRESNAHAN, M. D., Assistant Resident Physician, Massachusetts General Hospital.

Large hospitals as a rule are well organized and effective in their efforts for the welfare of patients. Were this not so, it would have been difficult for them to have become large or to remain so. The modern ideal, however, demands something more than merely maintaining a high standard of organization; it demands intelligent contributions towards the prevention of disease, towards the after-care of the sick, and towards the social aspect of a "case," of the patient's family as well as of himself.

The modern hospital is coming to be looked on as a laboratory in which to study these questions of increased efficiency, and such an institution does its full duty only when it contributes its results to the common fund of what may be termed "hospital knowledge." It is with this thought in view that we offer something of what has been attempted along these lines of efficiency at the Massachusetts General Hospital during the last few years.

Before speaking, however, on these aforementioned topics, we would describe a few of the methods we have found of value in striving for more thorough work.

Some four years ago our surgeons realized that to obtain the best results, greater specialization in their particular field was necessary, and accordingly a system of special assignments of cases to certain men, best qualified to operate for the particular malady in question, was devised. In other words, patients requiring gastric surgery were assigned to one surgeon; those suffering from carcinoma of the uterus to another; the prostatic hypertrophies to still another; and so on. The results have been encouraging. The mortality percentage has not only been lessened, but more difficult cases have been successfully accepted by the operators, as they have become more familiar through constant practice with the difficulties of their especial operative divisions.

Another innovation made recently by our surgeons is what is known as "fracture cards." When a patient is discharged from the wards of the hospital to the out-patient department, for treatment of a fracture, a card containing details of the cause, treatment, and x-ray results of the fracture, is made out by the house officer on duty in that particular ward. This is filed in the out-patient department record room, and all subsequent data are added by the out-patient physician. This system of cards not only gives the out-patient physicians complete and accurate data upon which to work out their after treatment, but also forms a complete and permanent record of all fracture work done in the hospital, and can be used not only for statistics, but to bear out any points of treatment which the surgeon may wish to emphasize when writing a paper. In other words, it epitomizes in accessible form, all fracture work.

On the medical side of our hospital "the special assignment plan" has been only tentatively tried, but the indications are that before long our medical men will realize as strongly as our surgeons do now, the value of special fields for special men. We have at present in the hospital a young physician who has devoted himself for the past few years to the more scientific methods of heart study. An electrocardiograph has been installed, and his expert services in the finer grades of heart diagnosis are in constant demand. We have found that while these refinements of highly accurate diagnosis do not materially affect the treatment, they have considerable bearing upon the prognosis; and that, after all, is a matter of great importance to the patient.

An attempt at refinement in diagnosis has been made by the cooperation between our surgical and nerve departments in emergency cases of head injury. When a man is brought to our accident room with a question of cranial injury, he is seen in consultation by one of the younger men of the nerve visiting staff. This consultation has proved of considerable value to the operator, for it enables him to open the skull at the point which can be perhaps more properly determined by the nerve specialist than by the general surgeon.

A rather novel method of "checking up" difficult diagnoses has been tried out by our visiting staffs with considerable success. On Wednesday at noon of each week, the combined house and out-patient services unite for a ward visit, which is limited in time to one hour. During this visit the difficult cases are brought out, and the history and physical examination read aloud by the physician in charge. Each doctor present is then required to write on a slip of paper his diagnosis and the reason therefor and to sign his name. These slips are then collected and read out by the physician in charge of the case and a short discussion follows.

In our department of social service a constant effort is made towards increasing the efficiency with which a patient is handled, not only from the socio-medical point of view, but also from the socio-familial and the socio-occupational point of view. The field of social service is so broad and has so many ramifications, that unless one is careful, one's efforts are dissipated, owing to the size of the problem. Our care, therefore, has been to concentrate our energies along a few broad lines.

An interesting detail of efficiency along one of these lines is illustrated, perhaps, by the cooperation between the social service and the dietitian of the hospital, in the attempt to send out patients requiring special diets, with a *definite* idea as to just what they should eat after leaving the hospital. We have had printed diet lists made, which are given to our diabetic, nephritic and gastric patients. They are given careful personal instruction by our dietitian and social service worker as to what they must do to keep well. They instruct the patient in detail as to the proper method of estimating the correct amount of carbohydrate, protein and fat to be eaten daily. In difficult cases a collection of menus is given to the patient. This has proved of inestimable value in making life worth living to the diabetic who is condemned for years, to what would be an extremely unpalatable menu, were it not for the instructions which insure a variety in form and taste which can be supplied by the experienced dietitian. This form of instruction alone would probably be of little value were it not for the faculty of the experienced social worker in seeing that the

[1]Paper read before the Conference of the American Hospital Association, San Francisco, June 22-25, 1915.

interest of the patient's family is enlisted towards carrying out the program. Those in charge of this work report very encouraging results of their efforts; for it is found that most patients take sufficient interest in themselves to write at regular intervals and explain as to how they are getting along and as to whether or not they keep sugar-free. The fact that patients are usually anxious to keep in touch with the hospital which presumes to take an individual, rather than a *case* interest in them, leads us to speak of the development of what we call the follow-up system in our hospital.

We make an effort to keep in touch with every patient after he leaves us. In most cases we are content to hear from him once a year, but in many cases, especially those in which the character of the man's disease is of an insidious nature, we make an effort to hear from him at more frequent intervals. The mechanism of this follow-up system in the main hospital may be briefly described as follows:

In our central record room there is filed under the name of each patient a card known as the "End Result Card." This card contains all the important data in very condensed form. In other words, the name and address of the patient, of his friends and of his physician; the preliminary diagnosis, the final diagnosis. It contains the detail of the medical and surgical findings, and the condition of the patient at the time of his discharge. One year following his discharge a letter is sent to the patient, asking him to return to the hospital for inspection, provided he lives within a reasonable distance. Should he live too far away, he is asked to forward us, by return mail, a complete synopsis of his physical condition, from the time he left the hospital up to the present. The result of our inquiries, both as to the inspections and the data mailed us, is entered upon this "End Result Card," so that each card represents the important points of the patient's history, of his stay in the hospital, and of his subsequent medical history. In other words, it is not necessary to consult old records and recent correspondence to find out about any case; it is kept to date on his "End Result Card." In addition to the yearly letter, we have also what are known as "Case Groups." For example, the surgeon whose special assignment is gastric surgery will, from time to time, send return postcards to each of his gastric group. The man interested in hysterectomies will request that cards be sent to his group. The same applies to the goitre group, to the fracture group, to the breast cancer group, etc. The data contained on these postcards is entered daily upon the End Result Cards, as well as in the patient's records. An additional refinement of this follow-up system is, that should the physician in charge be especially interested, either from a scientific or from the purely humanitarian fear, that the patient might not take care of himself, he merely puts his name on the list, and the man is notified monthly to return for inspection.

In our out-patient department we carry this follow-up system a little farther than we do in the main hospital; though we have long ago learned that we should not attempt to follow up every case admitted, for we have a large out-patient department, averaging between six and seven hundred visits a day. We have lately confined our efforts to selected cases; for example, in the children's clinic, let us suppose that a badly neglected case, which requires rigid supervision of the feeding and of the home hygiene, is admitted. A card is made out for the clinic card catalogue, containing the name and address, the last most painstakingly accurate. Our special form of card has a condensed calendar printed thereon. After the case has been examined by the physician, he notes in a space provided on the history card or record, the date upon which he wishes the patient to return—let us say, for example, one week from date. At the end of the morning clinic, all the histories are collected and the date on which the patient is to return is copied on the individual's card calendar, which we have just mentioned. These cards are then filed under the dates on which the patients are to return. Should a patient not return on the proper date, he is given two days' grace and then a postcard is sent, asking that the mother bring the child to the hospital as requested. Should she fail to do this, a return postcard is sent, asking that we be informed as to the condition. Should no notice be taken of this return postcard, the social worker makes a visit if the doctor thinks the case is urgent; or should a personal visit not be necessary, a letter is written, asking the favor of a reply.

It is a debatable question as to just how far the responsibility of the hospital extends in looking after people. It may be that our tendency is to assume too much of the burden; but our results in following up these selected cases of either urgency or neglect, lead us to think that we are on the right track. This whole question of the future scope of the work undertaken by our hospital is a big one, and it seems to us that it can be answered only by the facts brought out in the line of trial and error.

Perhaps one of the most interesting phases of our progress lately is the investigation of the relation of occupation to disease. When a patient is admitted either to our out-patient department or to the main hospital, we find out with considerable care as to accuracy and detail his occupation. For him to tell us that he is a shoemaker is not sufficient. We want to know what part of the shoe he makes and what his particular share in the making is called. That is to say, whether he be a cutter, a buffer, a nailer, a stitcher, a laster, a treer, a vamper, or what not. These various subdivisions of the occupations are classified as accurately as possible, though as the work has never been done before, there is no guide to follow in the cataloguing. What discoveries our physicians may make as regards the relationship of occupation to disease, we cannot say, but if what has been done along the lines of lead poisoning is any indication, we may look for extremely beneficial results of our work. In our hospital, all workers in trades using lead are referred to the attention of a social worker who is specializing in occupational diseases. She fills out a form on which is stated not only the history of the man's disease in brief, but also the history of his occupation. The actual social work which follows is as interesting as it is important. Should he be found suffering from plumbism, his employer is interviewed and the actual working conditions looked into. If necessary a campaign of education as to the prevention and the spread of lead poisoning is undertaken. The education of the employer as well as the workmen embraces not only hygienic improvement, discussions as to washing facilities, the value of respirators, etc., but also takes the form of the distribution and posting of printed notices containing rules for the avoidance of the poison, and includes also personal interviews with the workmen. Our social service reports that the character of their reception at the various plants has been most cordial and welcome. Requests for literature from distant points have shown how the news of the good work has spread, and we are becoming more and more convinced that it is not a case of the employers being callous as to the question of lead poisoning among their workmen, nor

of the workmen being callous as to the question of lead poisoning among themselves, but that it is just a case of either not knowing, or not realizing in time, the insidious danger of lead poisoning, and that both employer and workmen are as a rule quite willing, and in many cases quite anxious, to cooperate towards the prevention of this disease, if anybody will but take the time and trouble to instruct them how it may be done.

That routine we have just outlined as regards plumbism is being gradually extended so as to include the other dangerous trades. The ideal we are attempting to reach is the prevention of a trade either becoming dangerous, or remaining so, to the patient whose health is in our care. We feel that we should aid with all our strength, the prevention of disease, and if conditions force us to do so, attempt to persuade the employers to change the patient's occupation to one in which he is less susceptible to involvement.

The transferring of patients to other institutions has always offered a broad field for social work, but latterly we have been paying more attention to the details of this form of welfare. We are endeavoring to place the patient where he will be most happy, or perhaps where it will be most convenient for his family to visit him. Then, too, our social service is learning to put far more time than ever before in investigating the resources of the patient's family, and selecting the institution to which he is sent with a view to those resources. We feel that it is the hospital's duty not merely to place a man who has become a chronic invalid in a chronic hospital, but to place him in such a hospital in which the entire family will not be impoverished by spending their financial energies to support the patient in a pay institution, when he might be made quite comfortable in one to which there was no expense attached. In other words, our hospital conscience is becoming aware of the hospital's duty to the family as well as to the patient.

It has become quite patent in recent years, especially to those most interested in the admission of patients to charitable institutions, that we must extend our lines so as to include among our beneficiaries not only the very poor who already receive free treatment from the most skilled of our physicians, but also the man whose income bars him from the charitable institution but does not admit him to a private institution worthy of the name of an up-to-date hospital. It is the man of small income who cannot afford to make a circuit of consultants for expert reports as to his eye condition, the question of a Wassermann test, bismuth x-ray interpretation, etc. It seems to us that there is a duty that our hospitals, with their complete plants and staffs, owe to men of small income. Would it not be a magnificent increase in the efficiency of our hospitals were they to devote a certain portion of the day, either afternoon or evening, to a clinic manned by a well paid staff of experts in the various branches of medicine, where the man of limited income could be admitted for a reasonable fee and obtain the routine examinations which would be otherwise denied to him because of their expense? Why should not the general practitioner have an opportunity to avail himself of this consulting clinic? We feel that he should.

The final topic we wish to bring to mind is the one which is creating so much discussion in the hospital world—namely, the feasibility of the full-time staff. It is a question that must be well considered by the hospital administrator who desires to increase the effectiveness of his organization. We must realize that nobody does his best work in an undertaking which is but his second interest, and that should a physician be enabled, through a sufficient salary, to devote his entire time to hospital work, we should be enabled to command a quality of endeavor otherwise impossible. For generations noble men have given lavishly of their time and skill to the needs of our hospitals; but the expenditure of energy required by modern times to gain a livelihood, and the amount of study and research required to keep abreast of medical progress, tend to make the practicing physician's traditional devotion to charitable hospitals more and more difficult to secure.

It is a question we must meet and meet squarely. The best interest of our hospital patients demands it.

There are several methods of meeting the issue. It has been suggested that a "pay clinic" be instituted in conjunction with the free hospital, or that certain selected members of the staff be placed on a salary, or that special consultation clinics, where a moderate fee is charged, be established. These various suggestions all have value, and the final solution of the problem may embody them all, within certain limits. It seems to us, however, that for the present at least, the ideal arrangement is for large hospitals to reciprocate with the teaching staffs of our medical schools. Teaching affords the one unrelenting stimulus to the physician for keeping abreast of medical progress and makes for the most careful work. No man can unconsciously retrograde long in the presence of students, nor can patients fail to gain by the collective scrutiny to which their ailments would be subjected. This plan of having our hospital staff made up largely of the teaching staff of an adjacent medical school would mean that each man would be paid a salary, which, though moderate in itself, would so supplement his teaching stipend as to pay adequately for his time.

We realize that we have but touched upon many important subjects. Each one of them is worthy of a paper in itself. If, however, we can help hospital administrators to think more deeply upon the broad questions of hospital development and consider more carefully how the hospital should serve the community, we have attained our object.

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## Medical Education[1]

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Viewed in a broad way, the practice of medicine embraces every phase of the medical world, and the strength of its structure is dependent upon the solidity of its foundation—namely, medical education.

Medical education is the development of the individual to his fullest capacity as a physician.

*The physician's life.* The scientific functions of the physician are involved in the prevention, alleviation and cure of both the physical and the mental ills of man. From the very nature of these functions it is evident that the physician is brought into most intimate contact with the body, the heart and the mind of the human family.

Because of these manifestly serious scientific responsibilities; because also of this position of sacred trust in the family and community; and, further, because of the physician's influence as to the well or ill-being of the entire medical world, it follows that highest attainable standard of medical education is the only logical one, and should be demanded by humanity on the plea of self-protection.

Hence, predicated for medical education is the duty to

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give to the world the physician who, first, is adequately equipped in the art and science of medicine; and, secondly, is an individual of sterling ethical qualifications.

It is obvious that the first requisite for marked success in the practical application of a science is that a fundamental knowledge of this science exists. But the existence of such scientific knowledge can only be realized by the genuine scientist carefully working through a long period of time.

Broadly considered, medicine is a study of all the sciences involved in the normal and the pathological biology of man. It is an undeniable fact that a fundamental knowledge of many of these biologic sciences is far from realized. This inadequate state has been attributed to the comparative youth of modern medicine, but there are other and avoidable causes which have retarded our scientific advancement.

The realization of genuine scientists and the correct principles of ethics in medicine depends, in the first place, upon the correct selection of the student; and, secondly, upon the soundness of the educational system in which the student makes his medical course.

In selecting the student, his natural and acquired qualifications should be carefully considered. Natural qualifications embrace physical, intellectual and moral aptitude for the life of the scientific and ethical physician; the acquired qualifications involve a preliminary training which is a fitting preparation for the study of the art and science of medicine.

Aside from normal health, physical aptitude is a reflex constitution adapted for skill in medical art; for example, a bent for the technic of the laboratory, for the various tests of diagnosis, and for the treatment of disease, such as the surgical or some other special phase.

Intellectual aptitude is a special talent for the art and science of medicine in contradistinction to a talent for mechanics, law, politics, business or some other path of life.

Moral aptitude is a particular, sterling type of manhood which is essential for honest scientific research and for the intimate relationship of the physician with the life of the human family.

*Preliminary training.* This should consist of a true liberal education and special courses in physics, mechanics, chemistry and biology of the lower grades of being. Liberal education involves a fundamental knowledge of the principles of logic, ethics and natural theology. The science of logic is the instrument of correct thinking; the science of ethics is the instrument of correct human conduct, the proper relations of man to man; the science of theology covers man's actions toward the Deity. Further considered as essential, at least as a strong desideratum, is a practically working knowledge of certain languages, such, for example, as Latin, German and French.

A standard such as this for entrance into the medical course may appear unnecessary, but is it too high when viewed in the light of the physician's grave responsibilities?

*Medical course.* The next essential for the development of the scientific and ethical physician is a medical course which is adequate. This course should be viewed as beginning with the student's entrance into the medical school and ending with his graduation from hospital internship; hence, the training in medicine may be divided into the school and the hospital period, and to each of these periods the fundamental principles of an educational system should be applied.

*The educational system of the school period.* Man, the subject of the study of medicine, is an organized unit composed of physical and mental elements. These elements comprise a unified system of various parts which are essentially interrelated. On these interrelated parts of man, normal or pathological, all the sciences of medicine are based. Hence, the first requisite for the organization concerned in the study and teaching of the medical sciences is unity, unity in the structure and unity in the working. Thus, the building should embrace medical school and general hospital combined as one. The individual departments should be complete in number and character, located according to their natural relationships, fittingly equipped, and operated as a harmonious unified system. Further, and decidedly fundamental, they should be manned by educators who are duly qualified. To repeat, for the sake of emphasis, all the component parts of this educational organization naturally, therefore, should be harmoniously interrelated, and thus maintained by constant, continuous and methodical correlation.

That such structural and functional unity would best conduce to adequate efficiency is obvious; but that this uniformity is far from commonly realized in the medical education of today is manifest. In fact, for the most part, we see the medical school and general clinical work widely separated in location, incomplete in their departments, hence, lacking in thoroughness and not duly unified in their operation.

The departments of the medical course should be comprehensive in number and character. This involves a question of serious importance to the medical world. Lack of such completeness has conduced to much disorder, disorder in the regulation of the practice of medicine, disorder in the ranks of the medical profession itself.

The completeness of the departments of medicine should naturally be based upon the life of the physician. The physician's life embodies his scientific functions and his ethical relations. As previously stated, the scientific functions of the physician are concerned with the prevention, alleviation and cure of both the physical and mental ills of man; the ethics involved covers his relations to man in general, and to the patient and the fellow physician in particular.

In the light of this definition of the physician's life some points of manifest importance present themselves for most careful consideration.

In the first place, we know that when the body is the victim of invasion by an injurious agent two principal sets of phenomena result, namely, 1, a series of specific pathologic processes; 2, a series of specific protective processes. Hence, the agent which causes the disease stimulates at the same time specific efforts on the part of the body to cure itself. Therein lies nature's indication as to the method of scientific treatment. An endeavor in this direction is seen in the application of vaccines and antitoxins.

In a certain sense, then, the dictum, "*similia similibus curantur*"—like cures like—is true, and it would seem that in this observation of nature's plan a special school might have had its origin. Thus we see the possibility of a special school of medicine being unscientifically erected upon the tardiness of our own scientific advancement.

Since the physical and mental elements of man are harmoniously related in the normal health, it is but natural that a disturbance of the processes of the one should conduce in some degree to derangement of the processes of the other. Further, generally speaking, the treatment of disease of the one should be favorably influenced by efforts to restore a state of equilibrium in the other. This brings out the point of the influence of the condition of the mind upon the well-being of the body, a phase in the causation and treatment of disease that is an essential part of the

science of medicine. Yet failure to embody or duly emphasize this point in medical education has contributed to the existence of charlatans, and to the origin of a special school or sect which applies mental treatment absurdly, even dangerously, as a general principle, while it properly involves a particular, scientific application.

Again, disease may be locally limited or variously extended; it may consist either of structural lesion with varying disturbances of function, or of functional derangement alone. There is a certain class of conditions commonly and indefinitely termed neurasthenic, neurotic and the like. The cause of these is frequently assumed to be mental, whereas, in fact, many of them are due to some physical irritation, such, for example, as stasis in an old scar, or some other form of local congestion. Here again lack of emphasis in the regular medical course has contributed to another set of special schools, whose foundations are based upon massage, electricity, mental treatment, and the weakness of human nature.

To repeat, for the sake of stress: the practices of these various sects, which are dignified with the name of schools, are based upon nothing else but essential parts of the science of medicine which have been neglected in medical education. It is no wonder, then, that legislators experience difficulty in regulating medical practice. Hence, the departments of the educational system should be comprehensive in number, character and thoroughness.

*The faculty.* This should comprise a harmonious body of qualified educators, selected for ability as scientists and teachers, and all the work of the school-hospital should be under their control. The function of the faculty is twofold, namely, first, scientific research, aiming at the establishment of medical science upon a firm basis; second, the correct training of the student for the responsible life of the physician.

Predicated, then, for the educator are natural and acquired qualifications. Natural qualifications involve the physical, intellectual and moral aptitude which is requisite for genuine scientific research in medicine and for the role of educating the future physician; the acquired qualifications embrace the measure of scientific knowledge possessed and of medical art developed.

Here scientific knowledge comprehends not only a consistent knowledge of the art and science of medicine, but also of the generally applicable principles of logic, ethics and natural theology, and of the particular principles of medical ethics.

It is perfectly obvious that scientific research demands a fundamental knowledge and strict application of the correct principles of logic, in order that false premises and illogical deductions be avoided in the solving of problems.

It is also patent that for the scientist and educator in medicine a fundamental knowledge and strict application of ethical principles are essential in the interests of honest research and sound teaching.

Further, it is manifest, what the evils of the medical world emphasize, that that medical institution which does not embody at least natural theology is incomplete in nature, is a materialistic, soulless thing.

That in general a standard such as this is not realized in the medical faculty of today, is a common observation. In fact, a unified faculty, working in harmonious correlationship with complete control of an organized medical unit, does not appear to exist.

Again, commonly the complexus of the faculty is not determined by the criterion of true worth. As a result of this illogical and detrimental policy there are institutions for medical training which embody few true scientists and educators, with the obvious consequence of published research which little enhances scientific advancement, and of education in medicine that is far from adequate for the responsible end.

*The medical text-book.* This should be composed of matter expertly selected for its scientific value and classified in a logical order. That present-day medical textbooks are in general unscientific is a fact emphasized by authoritative educators. This is due, in the first place, to a dearth of scientific educators in the medical profession, and, in the second place, to a commercial spirit that is unethical and destructive.

An attitude, which is known to exist in some places, that anything is good enough for a medical text-book, is unintelligible, viewed in the light of scientific education. The resultant of such an attitude is a serious injury to the science of medicine, and the degree of this injury is parallel with the popularity of the author. Popularity in the profession of medicine is no index of a genuine scientist and ethical physician, as observation teaches.

It is obvious that the sciences embraced in the normal biology of man are the foundation of all the other medical sciences, hence, until these sciences are established upon a firm basis, the entire superstructure of medicine must necessarily involve much of error.

Structure and function should be studied from the standpoint of embryology, and not as more or less isolated groups of developed states. Thus considered, anomalies and developmental defects would become more intelligible, and knowledge of the various systems, for example, the gastro-intestinal, etc., would be scientifically based.

Pathological biology should be viewed as digressions of the normal processes, varying in characteristics with the field affected, and with the specific nature and energy of the injurious agent. Thus, for example, a particular tumor would be studied as a digression of the normal cellular elements, with resultant hyperplasia, and as due to a special diverting cause. Hence, tumors should not be considered as entities, unscientifically classified with an unending list of unintelligible, descriptive names.

*Diagnosis and treatment.* The importance of these phases of the art and science of medicine is manifest, but time does not permit of a free discussion of them here. There are a few points, however, which it may be well to emphasize.

The first step in diagnosis, and a fundamentally important one, is the history. This, to be adequate, should be comprehensive and exact. From the history there may be elicited: 1, an inherited or acquired tendency to a specific digression from the normal, or a specific receptiveness for a certain injurious agent, for example, a tendency to cancerous digression or a receptivity for the agent of tuberculosis; 2, exposure to invasion by a particular pathogenic cause; 3, information as to the power of the individual's resisting forces. A history thus obtained would not only be enlightening for immediate use, but would also contribute to the scientific study of fundamental problems, such, for example, as the problem of heredity. However, despite such importance, the matter of the history is not duly emphasized in the course of the student, as is manifest in the records of any medical institution.

*Diagnostic tests.* Among the causes of disease are various chemical agents, some of which come from without, while others are developed within the body itself. There are pathological conditions the causes of which have not yet been demonstrated. It would seem that the science of diagnosis must be developed along the lines of what, for lack of a better term, may be designated bio-chemical tests. It is obvious that many of our present-day methods of diagnosis are indefinite and unscientifically based.

*Treatment.* The department of preventive medicine is of fundamental importance. This embraces the science of hygiene and sanitation. Hygiene consists of all those measures, such as diet, exercise, rest, etc., which assist nature in conserving and developing the physical and mental energy of man. Sanitation comprises such means as protect the individual, the public in general, against invasion by injurious agents. Important as is this department, it is far from duly emphasized in the medical training of today. Because of this lack of emphasis, because also of the resultant skepticism of the public and the omnipresent obstructiveness of politics, preventive medicine has not attained its rightful place in the medical world. Financial encouragement being withheld, relatively few competent physicians specialize in this field, and hence a great work, both economic and humane, is not adequately accomplished.

The role of the physician in the treatment of disease is as an aid to the natural forces of the body, hence scientific treatment must be evolved from a knowledge of the fundamental sciences of medicine. It would seem that when these sciences shall have been better known many of the present-day methods of treatment must be considerably modified; for example, it is probable that with the establishment of those sciences upon a firm foundation, the field of operative surgery shall be far more narrowly limited.

The present popular position of surgery appears to be rather abnormal, and it is a question whether treatment as an art and science has not been retarded by such isolated emphasis. At all events, it seems that the medical world of today is possessed of a surfeit of operators and a dearth of scientific surgeons.

*The period of hospital internship.* Since this is an essential part of the proper preparation for the practice of medicine, the hospital in which the intern is trained should be conducted on an educational basis. This predicates the application of the fundamental principles which have been discussed under the caption of the school period. Briefly repeated, the hospital should be planned as an organized unit, with the departments complete in number and character in accordance with the nature of the particular institution. All these departments should be fittingly equipped, located with respect to their natural relationships, manned by a staff duly qualified as educators, and operated as a unified system. Educational discipline should pervade the hospital from the lowest to the highest position.

The fitting preparation for specialization is a complete intern service in a general hospital.

The first duty of every medical institution which assumes the responsibility of caring for the sick is, that each patient be given the benefit of the best service of which the art and science of medicine is at present capable. This treatment is the right of the individual who entrusts his health or life to such an institution.

The resultant of the educational plan applied to the hospital would be more painstaking work, efficiency in the care of the patient, the scientific development of the staff as a whole, the elevation of the hospital's standing before the public, the advancement of the art and science of medicine, and increasing betterment of humanity in general.

*Ethics.* Failure to lay stress upon the correct principles of ethics in medical education has contributed to many glaring evils in the medical world. The God-given right to life of every creature, that right which begins with the first moment of existence, is either ignorantly or culpably disregarded.

A recent propaganda for the regulation of birth-rate contains in some of its presentations certain intimations as to means, which are fundamentally unethical, crude, and would be destructive of both the morals and the health of the human family. There are correct principles of ethics covering every phase of life. The solving and teaching of such serious ethical problems are the functions only of those who have been fundamentally educated in the science of ethics, in contradistinction of the sophist.

Institutions are conducted under the name of hospital which, neither from the standpoint of ethics nor of scientific fitness, have a reason to exist. The body of suffering humanity seems often indeed to be viewed as a financial asset. This is manifest in the corrupt practice of fee-splitting and in those institutions which are more or less cleverly operated on a commercial basis. In a word, the innocence or weakness of human nature is being criminally commercialized both by individuals and institutions.

It is manifest that progress in the medical sciences, order in the regulation of the practice of medicine, and proper ethics in the medical world, must be dependent upon most careful discrimination in the selection of the student, and the strict application of educational principles to the medical course.

## VAN NORMAN GOES TO THE WAR

### First Assistant Superintendent at Johns Hopkins Retires to Enter British Military Service

Dr. Karl Van Norman, first assistant superintendent at The Johns Hopkins Hospital, has resigned his position to accept a commission in the British Army Medical Corps. He is to report at headquarters in London as soon as possible.

Dr. Van Norman is thirty-four years of age and unmarried. He obtained his education in Toronto and graduated from Toronto University, where he received both his academic and medical degrees. He afterwards served on the resident staff of the Toronto General Hospital. He then went to Pittsburgh, and for about three years was resident physician in charge of the hospital supported by the Pittsburgh Tuberculosis League. Having definitely chosen an administrative career, he resigned his position in Pittsburgh to accept the position of second assistant superintendent at the Johns Hopkins Hospital, which position he held for a year and a half, being promoted to the position of first assistant superintendent nearly a year and a half ago, following the death of Dr. Rupert Norton.

Dr. Van Norman's record has been a splendid one. He is a man of unusual ability and personal magnetism and is in every way fitted to make a high type of efficient hospital administrator. At the Johns Hopkins Hospital, where he had made very warm friends, his departure is looked upon with deepest regret. Dr. Van Norman saw his duty so clearly, however, that it would not have been proper to attempt to dissuade him from his purpose or to discourage him. With his training and experience in medical and administrative work, he should be a very valuable addition to the British Army Medical Corps. It is expected that he will be assigned to administrative duty where his services will be of the greatest value.

It matters not which army he has chosen to serve. That he has entered a service for the alleviation of suffering brought on by the war is sufficient reason that all of his colleagues among hospital administrators should join in wishing him Godspeed.

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Dr. G. R. Wiseman, of Amherst, O., is president of a corporation formed to build a $25,000 hospital in that city.

# CURRENT HOSPITAL LITERATURE

ALBERT ALLEMANN, M. D., Foreign Literature.
*Army Medical Museum and Library, Office of the Surgeon-General United States Army.*

**The Scope and Limitations of a Psychiatric Clinic in San Francisco.** Eva Charlotte Reid, M. D. Cal. State Jour. of Med., 1915, XIII, No. 10.

The absence of any facilities for treating mental cases in San Francisco and the limited amount of time given to the psychiatric clinic are cited as the main reasons for unsatisfactory results. The fact that without publicity 100 cases found their way to such a clinic in the first ten months of its existence leads the doctor to conclude that there is a rich field for active and fruitful work in this long-neglected field of preventive medicine.

**A New Profession—The Social Welfare Worker.** Murray Burnes Gordon, M. D. N. Y. Med. Jour., 1915, CII, No. 17.

Social service, or welfare work, is classified, for the purpose of demonstrating the extent to which the profession has grown, under three heads—municipal, institutional, and private. Dr. Gordon surveys the work of these three groups in detail to prove that the new profession of social worker has not only a legitimate field, but is a recognized necessity. He considers hospitals without a social service department as neither modern nor efficient.

**Open-Air Summer Schools** (Le scuole estive all' aperto). Tubercolosi, Milano, 1915, VII, No. 10.

The city of Genoa has at present three open-air schools for tuberculous children, all located in the neighborhood of the city. Besides receiving instruction the children get three meals a day. Each school has ample playgrounds. Two schools are near enough that the children can walk the distance to and from school. For the third school the children gather in the morning at a certain place, whence special street cars carry them to their destination and bring them back in the evening.

**Treatment of Sewage in the Swiss Hospitals** (Trattamento delle acque di fogna degli ospedali in Swizzera). Ospedale Maggiore, Milano, 1915, III, No. 7.

In the older hospitals of Switzerland the sewage is generally carried into the public streams without any attempt at purification, but in the new hospitals and especially in the isolation pavilions for contagious diseases, of which Switzerland possesses a great number, two types of sedimentation and purification of sewage are used. Where the sewage is not carried away by a public stream it collects first in a reservoir where sedimentation takes place. The liquids pass off into another reservoir and later are used for irrigation purposes. Disinfection is accomplished by mixing the disinfectant (chloride of lime) directly with the sewage in the sewer-pipe. Where canalization exists the sewage passes first into a sedimentation reservoir. The liquids are drawn off into a smaller reservoir, where they are disinfected and emptied into the canal, which carries them into a public stream.

**Mesothorium in the Hospital.** Zeitschr. f. Krankenanst., Leipzig, 1915, XI, No. 33.

The Board of Supervisors of All Saints Hospital at Breslau has recommended to the city authorities the purchase of 200 mg. mesothorium for the treatment of cancer patients. The price of mesothorium is considerably less than that of radium and the physicians have had a favorable experience with mesothorium in the treatment of cancer. Four tubes containing 50 milligrams each are to be purchased. It was found that this dose is sufficient for the treatment of cancer of the uterus, and as there is always a number of such patients at the hospital several patients can be treated at the same time.

**State Protection of the Uniforms and Badges of Professional Nurses** (Schutz van Berufstrachten und Berufsabzeichen für Krankenpflegegenossenschaften). Heilanstalt, Leipzig, 1915, X, No. 17.

Recently the German Reichstag has passed a law which prevents all persons from wearing nurses' uniforms or nurses' badges to which they are not entitled. During the present war a number of nurses' organizations have been formed who have their own uniforms and badges of distinction. It was chiefly to protect these organizations that the new law was passed. Any person wearing a nurse's uniform or mark of distinction renders himself liable to punishment. The execution of the law is left to the various states.

**The Medical Staff, Intern and the Medical Profession.** J. G. Cross, M. D. St. Paul Med. Jour., 1915, XVII, No. 10.

The relation of staff, intern and hospital are considered under four aspects: first, the care of the patient; second, the training of the intern for future practice; third, making the material and experience of hospital practice available for the profession at large; and fourth, the study of problems related to medicine and surgery by means of bedside clinics. The doctor's main appeal is that the work of the staff of a large charity hospital should benefit the profession at large, and that any physician entitled to information which the staff can furnish should be welcomed to the wards or the record room at all times.

**A Chinese Autopsy.** Alfred C. Reed. Boston Med. and Surg. Jour., 1915, CLXXIII, No. 16.

The Board of the Interior of the central government at Peking issued a proclamation in 1913, legalizing autopsies and post-mortem dissection for educational purposes. While this proclamation initiated post-mortems in the open ports such as Hankow, Shanghai, Canton, and also in Peking, the interior popular superstition and prejudice have thus far been proof against this governmental mandate. Dr. Reed writes a graphic account of the first autopsy in Hunan Province. This was performed on the 20th of August, 1915, at Changsha, the site of the Hunan-Yale College of Medicine and Hospital. A body was found on the street by the police, and, suspecting foul play, the commissioners requested a medical certificate of the cause of death from Dr. Yen, physician in charge of the Yale Hospital. A formal post-mortem was arranged for the following morning at the Municipal Poor House east of the city wall. Drs. Yen, Young and Reed arrived promptly at 8 o'clock at the Poor House, and after diligent inquiry found that the suspected victim of foul play had been buried the night before. "It was a mid-August morning and the sun beat down through helmet and umbrella as

only a Chinese sun can do. We held council on the grave and finally sent for a detachment of police and a crew of grave diggers. The body was exhumed, the heavy coffin laid across two granite tombstones, a thousand years old or more, which formed a convenient table. Police armed with bayoneted rifles formed a large circle. With punksticks burning about us and a coolie swinging a sprinkling can of disinfectant like a large censer, the work proceeded." Thus, says Dr. Reed, was established a precedent for autopsies in Hunan Province that will be of immense value to Hunan-Yale College and Hospital.

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**Female Nurses in the Division for Male Patients at the Royal Saxon Hospital for the Insane at Colditz** (Ueber weibliche Pflege auf der Männerabteilung der Königl. Sächs. Heil- und Pflegeanstalt bei Colditz). Dr. Horsel. Zeitschr. f. d. ges. Neurol. u. Psychiat., Berlin, 1915, XXVII, No. 2.

A number of pavilions were set apart where only female nurses are employed. The patients were carefully selected as to their mental disease, character and tendencies. A head nurse supervises and controls all the nurses in all these buildings. The rooms of the nurses are well secured and separated from those of the patients. Only the best nurses of the female division were selected for the service in the division for male patients. The author reports that during the two years the new arrangement has been in force not the least trouble has arisen and that the results have been very satisfactory. There are nine hospitals for the insane in Germany which employ female nurses in the division for male patients. In twelve other hospitals female nurses are employed in the sick wards.

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**Floor and Wall Heating After the Old Roman System in the New Building for Surgical Diseases in the Military Hospital in Wiesbaden** (Fussboden- und Wandheizung nach Art altrömischer Heizanlagen in dam Neubau eines Hauses für chirurgische Behandlung beim Lazarett in Wiesbaden). Gesundh.-Ingenieur, München, 1915, No. 8.

In this building the heating system of the ancient Romans was improved upon by the modern methods of heating. The source of heat (wood and charcoal fire) of the Romans was replaced by a low pressure steam heat apparatus, with spiral tubing. Under the tiled floor there is a hollow space of .95 meter in height, in which the air is heated by means of spiral tubes up to 50° C. The tiled walls are heated in a similar manner. The air, after being heated in the cellar, rises in a number of flat channels up into the walls, and after having given off its heat, returns to the furnace, without ever coming in contact with the air of the room. The loss of heat is limited by a cork covering of the stone wall. This heating system has proved comparatively economical. In moderate weather the floor-heating is sufficient, but in cold weather the walls must also be heated.

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**The Struggle with Tuberculosis in Venice** (La lotta contro la tubercolosi in Venezia). Dr. R. Vivante. Tubercolosi, Milano, 1915, VII, No. 10.

During the last few years the city of Venice has established a number of special hospitals to prevent the increase of tuberculosis. In 1913 the Hospital Santa Maria delle Grazie, located on Sacca Sessola island, south of the city, was greatly enlarged. The hospital has now five large one-story pavilions, two for males, two for children and one for female patients. There is room for 230 patients in all.

Another institution was established on Giudecca island in 1906 for children of tuberculous parents by the Venetian Society for the Prevention of Tuberculosis. It consists of one large one-story pavilion and receives only children under school age. In 1909 the city established an anti-tubercular dispensary in the northern part of the city. This institution has accomplished much good, especially through its educational campaign among the poorer classes.

For tuberculous children in the school age the city established two open-air schools in 1913. One hundred and twenty children are taught in these schools, the city providing for two meals daily. The lessons last only three-quarters of an hour, and each is followed by long intermissions employed in play and gymnastic exercises.

Besides these institutions the city owns two mountain sanatoriums for tuberculous children in the Venetian Alps. About 225 children are sent to these places every year.

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**Origin of Three Dublin Hospitals.** Ed. Boston Med. and Surg. Jour., 1915, CLXXIII, No. 15.

The three hospitals of Dublin referred to as having a "personality and distinction dependent on the circumstances of their origin" are the Rotunda Hospital, established in 1745 through the untiring energy and ingenuity of Dr. Bartholomew Mosse; the Stevens' Hospital at Kingsbridge, an institution founded by Richard Stevens and his sister Grizell in 1720, and Sir Patrick Dun's Hospital, opened for patients in 1808. Sir Patrick Dun, on his death in 1714, left his property to the Irish College of Physicians to establish a library and endow a professorship of medicine. His estate grew rapidly, and the accumulated income was sufficiently large in 1800 to establish the hospital that bears his name. The editor of the Boston *Medical and Surgical Journal* quotes the following from Dr. Patrick's admirable history of the Rotunda Hospital, to throw light on the remarkable character of its founder, Dr. Bartholomew Mosse:

"In August, 1748, he took upon himself the responsibility of a lease, for three generations, of four acres and one rood of land on the north side of Great Britain street, whereon to erect a lying-in hospital for at least 150 patients. He first laid out the grounds as public gardens, after the model of the Vauxhall Gardens, London, upon which he expended some £2,000 of his own money, walling in the grounds, erecting an orchestra room, concert room and coffee room, and planting trees and shrubs. Here he organized a series of entertainments with a view to producing a yearly income for the benefit of his charity. His expectations were not disappointed, and, in fact, to this day the hospital still draws a considerable income from the entertainment rooms and pleasure grounds established by him.

"The foundation-stone of the new hospital was laid on July 9, 1751. In December, 1756, a Royal Charter was granted. Mosse was appointed Master for life, and shortly afterwards a parliamentary grant of £6,000 was paid over to the governors, less £180 deducted at the treasury in certain imposts.

"Nearly a year later a committee of the Irish House of Commons gave a further grant of £6,000 for the completion of the hospital, and a benefaction of £2,000 to 'Bartholomew Mosse, Master of the said Hospital, as a reward for his great Care and Diligence in Attending the Lying-in Hospital in George's-Lane, thirteen years, and superintending the new Hospital in Great Britain-Street nine years and a half, by which he hath greatly injured himself in his profession, and hurt his Family in their Circumstances, having never received any reward.' Thus, after the overcoming of stupendous difficulties the New Hospital, from designs by the great contemporary architect, Richard Castle, was opened on Dec. 8, 1757, 12½ years after the establishment, as a private venture, of the original hospital in George's-Lane. At the time of the transfer from the old to the new hospital Mosse was able to report that 3,975 women had been delivered in the old hospital, with a maternal mortality of 1.10 per cent, 'mostly of fever several days after they were safely delivered,' at a total cost of £3,913, 13s, ¾d."

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# DEPARTMENT OF NURSING

MARY M. RIDDLE, R. N., Editor.
*Superintendent Newton Hospital, Newton Lower Falls, Newton, Mass.*

## The Nurse in Surgical Service

BY MARGARET J. ROBINSON, R. N.,
Superintendent Jefferson County Hospital, Fairfield, Iowa; Formerly Supervisor Operating Rooms, Grace Hospital, Detroit

General hospitals are so largely dependent on the success of their surgical service that I believe that any suggestion which will tend to help in the teaching of nurses for this service will not be unwelcome to the readers of THE MODERN HOSPITAL. A preliminary teaching of the nurse before she has her operating room work will result in a saving of time, in the economic use of material, and will also be of value to the operating surgeon, the hospital, and the nurse herself.

The nurse who is ambitious, and who keeps progressing in the wide field open for nurses today, may find herself in many places before the end of her professional life, and the wider the field over which she moves, the more will she realize the necessity of a uniform method of surgical service—a simple technic, one that can produce results with the smallest amount of time, labor and material.

It has been my experience, and I think the experience of many others, that although there have been many good text-books written on "Surgical Nursing and Technic" for nurses, it is rather difficult to map out a schedule for the classes usually given in the curriculum to this subject—one that will be practical, and that will cover the fundamental knowledge necessary for the nurse to have in order to assist intelligently in the operating room, and in the preparation and after-care of surgical patients.

A well-known actor once said, "The only school of acting is the stage itself," and I suppose that a nurse never really learns asepsis until she comes into her surgical service; but we know that anything which means so much to the results of surgery on the human body, and work that comes so close to the dividing line between life and death, should be removed as far as possible from the danger of experimentation.

I have heard nurses say, not once, but many times, "I never saw a piece of catgut until I went into the operating room"; or "Please tell me the names of some of these instruments; I never saw anything but the dressing instruments before I came up here."

I know that the larger teaching hospitals are carrying on a wonderful educational work, and have better methods for teaching of their nurses than anything I could suggest, but I thought perhaps the little plan I have worked out for my own classes might be of value to some who are wondering about the best way to prepare their nurses to give good surgical service. It has been fairly well proven that a class in surgical nursing and technic will produce better results in the latter half of the intermediate year.

### CLASS OUTLINE

1. Asepsis, Antisepsis, Sterilization, Fumigation, An Aseptic Conscience, Technic, Ethics of the Operating Room.
2. General Preparation:
   - Baths,
   - Diet,
   - Catharsis,
   - Enemata and douches,
   - Records of examinations and analyses,
   - Rest,
   - Suggestion and encouragement.
3, 4, 5. Preparation for the following cases:
   - Abdominal,
   - Vaginal,
   - Rectal,
   - Screen,
   - Eye, ear, nose, and throat,
   - Face and head,
   - Breast,
   - Amputations,
   - Bone graft and plating,
   - Fractures and dislocations,
   - Cæsarean section,
   - Orthopedic surgery,
   - Plaster casts,
   - Salvarsan,
   - Cystoscopic examinations and x-ray examinations and treatment.
6. Solutions—preparation and use:
   - Stock,
   - Reduction to required percentage.
7. Handling of sterile material:
   1. Tables,
   2. Basins, pans, pitchers, etc.,
   3. Irrigators,
   4. Steel drums,
   5. Jars,
   6. Water,
   7. Solutions,
   8. Linen,
   9. Packages.
8. Dressings:
   - Gauze—cut from bolt,
   - Grades—usage,
   - Wash gauze,
   - Gauze,
   - Folded sponges,
   - Lap sponges or towels,
   - Throat sponges,
   - Continuous sponges,
   - Packing,
   - Pads—
     - Abdominal,
     - Perineal,
     - Cord dressings,
     - Eye pads,
     - Involuntary.
   - Cotton:
     - Rolls,
     - Grades—1st, 2d, waste, non-absorbent,
     - Eye sponges,
     - Tampons,
   - Bandages:
9. Gloves, Sutures, Packing, Drainage, etc.:
   - Catgut:
     - Plain,
     - Iodized,
     - Chromic.
   - Kangaroo tendon:
     - Silk,
     - Silkworm,
     - Linen,
     - Horsehair,
     - Guttapercha,
     - Gauze packings,
     - Tubing—glass and rubber,
     - Applicators,
     - Rubber gloves.
10. Instruments:
    - Names and usage,
    - Care and cleaning,
    - Loss of instruments or parts.

    Needles:
    - Surgical, hypo, saline and aspirating.

    Syringes,
    Knives, scissors, razors,
    Hollow instruments,
    Eye, ear, nose and throat instruments,
    Cauteries—actual, Paquin, electric.
11. Preparation for anesthetic, and protection of patient under anesthetic, or in shock.

    Anesthetic Table:
    - Stethoscope,
    - Emesis basin,
    - Gauze swipes,
    - Towels,
    - Safety pins,
    - Hypo tray,
    - Mouth gag,
    - Tongue forcep,
    - Ether,
    - Mask,
    - Corks,
    - Vaseline.

    Hypodermics:
    - Strychnine,
    - Camphor in oil,
    - Ether,
    - Brandy,
    - Ergone,
    - Adrenalin,
    - Pituitrin,
    - Scopolamin { *c* morphia, *c* narcophin.

    Trendelenburg position:
    - Oxygen,
    - Heat,
    - Artificial respiration—mechanical, pulmotor, etc.,
    - Saline—subcutaneous, per rectum, intravenous.

12. Emergency service:
    Utensils, drugs, dressings and instruments, always to be ready.
    Removal and proper listing of clothing,
    Information of accident and history of patient,
    Shock and hemorrhage,
    *Asphyxiation,
    *Poisoning,
    *Heat prostration,
    Injuries—head, extremities, body,
    *Alcoholism.
13. Record:
    Name and location of patient,
    Operation (correct name and detail),
    Emergency,
    Other surgical treatment,
    Amount and kind of anesthesia,
    Time of operation and anesthetic,
    Just what involved in liability cases,
    Surgeon, assistants, anesthetist, nurses,
    Packing, bone plates, foreign bodies, drainage,
    Sponge count,
    Condition—pulse, respiration,
    Preservation of specimens,
    Report of any unusual phase of case.
14. Sanitation of the Operating Rooms:
    Housekeeping and order,
    Fumigation and disinfection,
    Light, air and heat,
    Deodorants,
    Disposal of linen, drainage, specimens, and amputated parts.
15. Technic of the clean nurse.
    Technic of the general nurse.
16, 17. Post-operative care:
    Gynecological,
    Eye, ear, nose and throat,
    General surgery.
18. Operating in a home:
    1. The room,
    2. The patient,
    3. The family.
    Sterile materials from hospital,
    Simplest possible technic,
    The oven, the washboiler, the teakettle.

*Although not properly belonging under surgical nursing, these emergencies frequently are admitted directly to emergency room of operating suites in hospitals.

### Unprofessional Meddlers

The following is quoted from an editorial in a recent number of the South African Nursing Record, urging legal protection of uniform:

"The war has taught us more than anything the great necessity for some such protection, for we have seen over and over again women—many of them of the highest social position, many of them also of the very lowest—who have not scrupled to masquerade in nurse's uniform, and newspapers which have not scrupled to describe them as 'chic' and 'very fetching'! That sort of thing sickens the legitimate profession. It is an insult to the outward and visible sign of an essentially noble calling. Granted that these women have every legal right to do it, they have no moral right to masquerade as what they are not, to don an apparel that is recognized by custom as the uniform of a splendid profession, and to pose in modifications of it because it is becoming. We hope that the War Office has been so sickened by unprofessional meddlers that protection of the nurse's profession, her name, and her uniform will soon be an accomplished fact."

## BOOKS FOR THE HOSPITAL LIBRARY

### Some Good Fiction, History and Autobiography to Make Convalescence Easier and Happier

Some of the books which were issued during July, August, September and October of this year, and which can be recommended for the hospital library, are as follows:

*Bronson Alcott's Fruitlands*, by C. E. Sears, is a very entertaining account of the Alcott family in one phase of their life. *The Spell of Flanders*, by E. N. Vose ($2.25), is a timely memorial of the beautiful land now laid waste by war; the numerous illustrations are very good. An interesting autobiography is that of *Tahan* (known as the Rev. J. K. Griffis), an Indian half-breed. Baynes' *Wild Bird Guests* tells of ways of attracting and taming the birds. In *Time o' Day*, by D. E. Jones, the scene shifts to Australia; this is one of the novels one recommends with reservations, for not everyone will care for it. *The Primrose Ring*, by Ruth Sawyer, is one of the pretty, little stories—a hospital story.

*The Secrets of the Hohenzollerns*, by the author of *Secrets of the German War-office*, gives one more thrills than any novel of Oppenheim, and if you are on the side of the Allies you will enjoy *Punch's Cartoons of the Great War*. James Lane Allen's *Sword of Youth* is a little tale of the Civil War; in *Penelope's Postscripts* we have some more of Mrs. Wiggin's delightful bits of travel; Mrs. Rinehart's *K* is another hospital novel. In *The Money Master*, Sir Gilbert Parker returns to French Canada and the habitant. *Some Women and Timothy* is very enjoyable, telling of the entanglement of good-natured Timothy while trying to straighten out his brother's affairs. A. G. Gardiner gives some brief biographical sketches of the men of the hour in *The War Lords*, and another very interesting biography is that of Dr. Anna Shaw, in *The Story of a Pioneer*. Most of us are much disappointed in *Michael O'Halloran*, Mrs. Gene Stratton-Porter's new book, but it must be confessed her heroes are rather on the "unco' guid" order. Another book of the war is Owen Wister's *The Pentecost of Calamity*, an arraignment of German militarism.

A book to chuckle over is Arthur Guiterman's *The Laughing Muse*, and Galsworthy's *The Freelands* deserves more than a passing comment. Frances Sterrett's *Up the Road With Sally* will while away an idle hour quite pleasantly, and *Little Miss Grouch* is simply delightful. *Felix O'Day*, F. Hopkinson Smith's last book, of old New York, and Mrs. Humphrey Ward's *Eltham House* are thoroughly good novels, and, with *The Freelands* and *The Turmoil* are decidedly the best of the year. Judge Grant's *The High Priestess* belongs with these more thoughtful books, but will not be so well liked because his heroine, a not uncommon type of the terribly efficient "new woman," is so disagreeable.

*Letters on an Elk Hunt* carries on the narrative of Mrs. Stewart's *Letters of a Woman Homesteader*, which everyone enjoyed so much, and in *Around Old Chester* Mrs. Deland has collected some old tales and told a few new ones of Dr. Lavender and his people. *The Old Order Changeth* is the sequel to Archibald Marshall's other Clinton stories, and is as thoroughly delightful. Two ranching stories are Arthur Stringer's *The Prairie Wife* and B. M. Bower's *Jean of the Lazy A*—this last a tale of the "movies" in action. Bertha Runkle has written a very readable novel in *Straight Down the Crooked Lane*.

Three very readable stories are Stackpoole's *The Pearl Fishers*, L. J. Vance's *Nobody*, and Randall Parrish's *Beyond the Frontier*. With the exception of the rattlesnake chapter, not good for nervous people, Vachell's *Spragge's Canyon* might be included with these. In *The Lost Prince* Mrs. Burnett has written a modern fairy tale.

Three volumes, which are rather local in their interest and rather more expensive than the ordinary hospital library may care to buy, but which are well worth while, are *Old Concord*, by Allen French ($2.70); *Old Boston Museum Days*, by Kate Ryan ($1.35); and Florence Converse's *The Story of Wellesley* ($1.80). To these should be added the new *Life of John Hay* (2 vols., $5.00) and *The Heart of Europe*, by Ralph Adams Cram ($2.50). Also Mildred Aldrich's letters telling of the battle of the Marne, first published in the *Atlantic* and now issued in book form under the title *A Hill-top on the Marne*.

E. Kathleen Jones,
Librarian McLean Hospital, Waverley, Mass.

# FOREIGN CORRESPONDENCE

## THE FIRST AUTOPSY IN CHANGSHA, CHINA[1]

### In Spite of Ages-old Superstitions the Chinese People Accept Western Medicine Gratefully—The Ceremonies of a Post-mortem

It may be of interest to readers of THE MODERN HOSPITAL to hear a word about the first official autopsy ever performed in this section of the interior of China.

According to the teaching of the great sage Confucius, "A filial son should be careful to keep his body in good health and every member should be intact." A story was told about a general whose eye was accidentally shot by an arrow. He pulled the arrow out and the eye came with it. Immediately he swallowed the eye and threw the arrow away. When asked why he swallowed the useless eye he said, "That was a part of my anatomy and it is only right that I should have it, even though it is useless, in order to be obedient to my parents." Filial affection, obedience and superstition have been a great drawback to the progress of western medical education and practice.

A man died a couple of hours after he was picked up on the street in Changsha, August 19, 1915. As no relative or friend could be found immediately, the police took hold of the case. A deputy from the health department waited on Dr. Yen, physician in charge of the Hunan-Yale hospital and requested a medical certificate of the cause of death. A formal post-mortem examination was quickly arranged for the next day at the Municipal Poor House.

The following morning three of the Hunan-Yale hospital staff met at an appointed time and proceeded to the Poor House outside of the North-East Gate of the city with the deputy from the health department. He was armed with a copy of the proclamation issued by the police commissioner, stating that in order to safeguard the public from epidemic and to uncover foul play or otherwise, an autopsy was necessary to determine the cause of his sudden death.

On arriving at the Poor House we found that the body had been taken to the cemetery upon the hill back of the institution, where it had been buried the night before. Thither we went with a guide. After tramping around a while we came upon a mound covered with fresh earth. We did not waste any more time in looking around, but camped there and sent for some coolies. Pretty soon four or five coolies appeared with pick and spade, baskets, pail of water and a sprinkler full of disinfecting fluid. In a little while appeared again six policemen with bayoneted rifles and an officer. We thought surely the autopsy would have to be abandoned right there with the coffin uncovered. On learning our mission of peace, however, the police allowed the work to proceed. Before the body was removed one of the coolies, with the sprinkler in his hand, began to pour the disinfecting fluid around the coffin, the policemen forming a large circle around us. After securing extensive specimens the body was re-interred and the coffin sealed by the deputy from the Yamen, or Court, indicating that it had been opened officially.

Judging from the extensive congestion of the internal organs death probably was due to heat stroke superimposed upon an extremely fatty degeneration of the liver.

The deputy from the health department made a short speech, explaining the importance of determining the cause of death in such cases. Dr. Yen followed with a statement of the need of such work for medical education.

During the past ten years in which western medicine has been practiced in this province of Hunan, it has made wonderful progress in the way of enlisting the patronage of the people. The fact that the first autopsy was made possible in a conservative city like Changsha marks a great awakening on the part of the officials, and a willingness to advance the cause of scientific research.

E. B. YOUNG, M. D.,
Changsha-Yale Hospital.

[1]Dr. Young is a Chinese, born and educated in Honolulu, a graduate in medicine from the Detroit College of Medicine; he served his internship in Grace Hospital and was for several years chief resident under Dr. Babcock.

## HOSPITAL SERVICE IN CHIENGMAI

### People of North Siam Do Not Take Kindly to Western Medicine, but Are Being Converted to Hospital Patronage

Chiengmai, the metropolis of North Siam, is at the very ends of the earth, being 180 degrees of longitude east of Washington, D. C.

The journey to Siam is made either by the eastern route, via the Mediterranean, Suez and India, or by the western route, via Japan, the Philippines and Hong Kong, there being but slight difference in either time or expense between the two routes. Bangkok, the capital of Siam, is reached in six or seven weeks' travel. The journey from Bangkok to Chiengmai requires another six or eight weeks, inasmuch as the only means of travel is by river boats. The boats are manned by half-naked, strong-limbed men, who, with setting-poles, propel the boat some six or seven hundred miles up the swift Maping river, ascending a series of forty rapids and traversing long stretches of jungle, the home of wild elephant, rhinoceros, bear, Bengal tiger and other large game. Very soon, however, this latter half of the journey will be eliminated by the advent of the railway.

Although western medicines were brought to North Siam by American missionaries some forty-eight years ago, it is only within the past thirty years that hospital work has had its beginning. And even after thirty years of effort we may say that the need of hospitals is only beginning to be appreciated by the people. So that in any mention of hospital work in North Siam, one can recount only the laying of foundations, the preliminary work of creating or developing a sense of the need of such an institution.

A recent editorial in THE MODERN HOSPITAL says, "We know now that a hospital is not a thing within four walls, but that it is a part of the life and welfare of the whole community; that we cannot hope to be of wide usefulness without an intimate touch with the homes of the people to be benefited." Although the hospital work of North Siam has been done very largely outside the four walls, inasmuch as it was impossible to reach any considerable portion of the sick in any other way, yet it has been of exceeding value, not only in its immediate results, but also in preparing the way for the more extensive hospital work in the future.

The people of North Siam are literate and well versed

Fig. 1. Vaccinating staff of Chiengmai Hospital. A staff of more than 100 trained men has carried vaccine to the people throughout the villages and country districts over a wide area. Smallpox has practically disappeared throughout the region covered by their work.

in the simpler arts of civilization. They are self-reliant folk, independent, non-aggressive and conservative to a marked degree. Although for centuries past infant mortality has maintained a very high rate, and epidemics of dysentery, small-pox and malignant malaria were wont to decimate whole villages and sections of the country, yet there was no joyful welcoming of the foreign medicine on its first introduction by Dr. McGilvary, the pioneer missionary.

So firm was the belief in evil spirits as the cause of disease and the consequent necessity of spirit charms and offerings for its alleviation, that the people were quite unwilling to accept foreign medicines. Dr. McGilvary at times bribed the sick to take quinine in order that its efficacy in malaria might be proved. By slow degrees this precious life-saving remedy fought its way into general recognition until at the present time the Siamese Government is attempting to put quinine, at a low price, within the reach of the entire country, including even the rural population.

Smallpox has ever claimed a heavy toll in Siam. In the North epidemics were wont to sweep across the country, destroying large numbers of the people, especially infants, the aged and the infirm, and leaving in their wake many blind and disfigured people. The following quotations are from a recent government publication on "Smallpox and Vaccination and the New Vaccination Law in Siam":

"In January, 1840, the first active vaccine scabs were brought to Siam by an American missionary. * * * It was not until the year 1904 that the Siamese government undertook the preparation of calf lymph in Bangkok."

The naiveté of these statements expresses most vividly the extreme conservatism of this land. Although American missionaries had carried on an active vaccination propaganda and had practically driven smallpox out of those regions covered by their operations, sixty-four years elapsed before the government took measures looking to widespread vaccination. In 1914 a compulsory vaccination law was enacted. This rendered unnecessary the vaccine laboratory operated in connection with the Chiengmai Hospital. During the nine years of its existence 495 calves were vaccinated, 800,000 doses of vaccine were produced,

Fig. 2. Chiengmai Leper Asylum. Visitors' day. Guests inspecting the water tower and cottages.

Fig. 3. Group of lepers at the Chiengmai Leper Asylum. There are 180 lepers at the asylum. The support of an adult leper costs $25 per year.

and some 200,000 persons were vaccinated by our staff of more than 100 trained men.

Militating against the willingness of the people to accept hospital treatment may be mentioned their gregariousness and their extreme love of home and family. Being a primitive people, they cannot conceive of better surroundings for a sick person than his own home, however mean and unsanitary it may be. So extremely loth are they to leave home when ill that it is well-nigh impossible to persuade them to seek hospital treatment in any acute illness. For this reason hospital patients are largely confined to diseases of a chronic nature. Notable among the ailments that seek relief are cases of vesical calculus. And yet in spite of the extreme suffering of this malady (the most extreme in the whole range of human experience) these patients usually do not come to us until years of suffering have worn out the endurance of even the stoical Siamese. In one instance a calculus weighing more than eight ounces was removed from a man fifty years of age. Language fails to convey in an adequate manner the agonies experienced by this sufferer during the eighteen years previous to the relief he finally found in the mission hospital. And yet, strange to say, other cases of stone in this man's neighborhood delayed long in applying for the relief which they were assured could be had in the hospital. The Western mind does not understand such stubborn conservatism.

As showing another characteristic of this people there might be mentioned the case of an official in a distant province who for years had been a great sufferer from vesical calculus. Having heard that relief was to be obtained in the hospital, he set out on a journey of some 300 miles to go to Chiengmai. On account of the mountainous roads there were but three methods of travel possible; travel by elephant, by pony or by sedan chair. The first two were found to be intolerable on account of his pain. His journey was greatly protracted. For weeks at a time he was obliged to desist from travel on account of great pain. Once he was beset by dacoits at night. A part of his money and all of his guns were stolen. When he finally reached the hospital, twelve months after leaving home, he was penniless and of course still suffering intensely. He was received into the hospital and was wholly relieved by an operation. A more grateful patient one rarely sees.

Vesical calculus is a common malady. For twenty-six years past the average number of operations in the Chiengmai hospital has been about 45 per annum. Of these approximately 98 percent are in males. In former years our cases were almost wholly adults, but at present the larger proportion is among children.

While malaria in its protean manifestations, ankylostomiasis and tuberculosis are very prevalent, those suffering from these diseases rarely come to the hospital.

Venereal diseases, which make up a considerable proportion of the hospital cases, are of recent introduction and obtain only in the towns, the great mass of the rural population being yet entirely free.

Surgery is limited largely to vesical calculus and lapa-

Fig. 4. Chiengmai Leper Asylum. Cremation is practiced and is the most satisfactory manner of disposing of the bodies of those who die from leprosy.

rotomy. Accident surgical cases are extremely rare; malignant tumors usually do not come to the hospital until they have passed beyond the stage where surgical help is possible. Amebic and bacillary dysentery are indigenous, and liver abscess, while uncommon, is met at times.

Our hospital of fifty beds furnishes the only modern refuge for the sick in a very wide area. It may be said that of the vast amount of medical work done during the past 48 years, totaling more than 100,000 attendances in 1914, that done in the five hospitals of the mission has been the least prominent and perhaps the least important. Nevertheless all of the outside work has a direct bearing upon the future of hospitals, inasmuch as it is educating the people and is slowly overcoming their ultra-conservatism in matters medical. Once convinced of the genuine superiority and desirability of any plan or procedure, no people more heartily give their confidence and endorsement than these same people of North Siam. Slow in forming their conclusions, when once formed, they become all but immovably fixed in their allegiance.

In view of the long preliminary medical work that has been done, the growing acceptance of foreign manners and foreign commodities, the profound influence of Christianity in breaking down superstition, the growing enlightenment due to educational work in government and in mission schools, there is a bright future for hospital work. Already there is a growing readiness to seek hospital treatment and there can be no doubt that within a very few decades there will be a large and ever-growing demand for hospitals and for Siamese physicians and surgeons trained in all the arts of western medicine.

J. W. McKean, M. D.,
Superintendent Chiengmai Hospital and Dispensary.
Chiengmai, Siam, 20 July, 1915.

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## Hospital Happenings in Pennsylvania

### DR. MILLS LEAVES UNIVERSITY OF PENNSYLVANIA

Dr. Charles K. Mills, the famous neurologist, who has been connected with the University of Pennsylvania Hospital for so many years, has resigned his chair in the Medical School of the University, with the announcement that he will devote his entire attention hereafter to post-graduate teaching, research work and private interests.

### TYPHOID FEVER EPIDEMIC

The slight epidemic of typhoid fever mentioned in the last letter has now abated, and the whole Health Department has been busily investigating the source of each individual case. According to Dr. Ziegler, Director of Health, investigation has shown that of the 211 cases of typhoid fever reported in this city since August 1, 46 were imported vacation cases and 14 were persons transferred from other towns. Of the remainder, 15 were infected by contact, 3 by bathing in the Schuylkill River, 3 by drinking raw water from the Delaware River, and one by impure milk. Not a single case could be traced to the city's filtered water supply.

### A NEW PENNSYLVANIA HOSPITAL

At 12 o'clock noon, September 29, 1915, the cornerstone of the Philadelphia Freemasons' Memorial Hospital, at Elizabethtown, Pennsylvania, was laid by Grand Master J. Henry Williams. This hospital is being erected as a memorial by the Freemasons of Philadelphia, the funds for which were collected by voluntary contributions from the members of the various lodges in Philadelphia.

The plans contemplate the erection of 5 buildings, 4 to be similar to the first unit now under construction, and to be used for patients, and the central building will be used for administration purposes, with a complete operating suite on the top floor.

All the buildings will be connected by means of wide corridors on each floor, and every provision will be made to conform to the standard of modern hospitals. Each of the 4 units will be 36 feet by 100 feet and 3 stories high, with 4 solariums, each of about 300 square feet, and each building will have a capacity for about 40 beds. The ground floor will contain isolation rooms, drug rooms, toilets, store rooms, kitchen, dining room, heater room and bed rooms. The first floor will contain bed rooms, diet kitchen, linen rooms, toilet rooms, and solariums. The second floor will contain bed rooms, toilets, linen rooms, diet kitchen, solariums and an operating suite. There will be a large loft above the second floor.

The building will face southeast, thereby insuring sunlight in every window some time during the day, and the location selected gives a fine view of the surrounding country and Grand Lodge Hall.

The building will be of fireproof construction, and the exterior walls will be faced with Holmesburg granite with Indiana limestone trimmings. It will have a slate roof, to harmonize with the other buildings on the property.

The architects are Messrs. Guy King and Edgar Wightman.

### BEQUESTS

The will of the late Mary Meredith, among other public bequests, contained one of $250 to the Children's Homeopathic Hospital.

The late Samuel Dickson bequeathed $50,000 to the William Pepper Clinical Laboratory of Medicine of the University of Pennsylvania.

The Woman's Medical College of Philadelphia has recently received $10,000 from the estate of the late Elizabeth Shippen.

The late Dr. Eugene I. Santee bequeathed $5,000 to the Aid Association of the Philadelphia County Medical Society.

The Presbyterian Hospital received a bequest of $5,000 under the will of the late Thebe A. Brown.

The Jefferson Hospital receives $15,000 as a contingent bequest under the will of the late Annie M. Wilson.

The German Hospital receives $4,300 by bequest of the late Elizabeth M. D. Prince; also $2,000 from the estate of the late Henry Schefer.

Among the public bequests contained in the will of the late Thomas McElmell were those of $5,000 each to St. Agnes and St. Joseph's Hospitals, and a contingent bequest of $50,000 and upwards to St. Mary's, St. Joseph's and St. Agnes' Hospitals.

The Woman's Southern Homeopathic Hospital, of Philadelphia, Pa., graduated a class of eight nurses in October. The commencement exercises were very fine and the reception in the Nurses' Home was a delightful occasion. This is one of the best small training schools in the state.

### NEW CHILDREN'S HOSPITAL

A campaign to raise funds for the proposed $500,000 second unit of the new hospital closed on October 31. A banquet ended the campaign, at which $350,000 was subscribed, and it is announced that the other $150,000 is in sight. An exciting feature of the banquet was the raising of $110,000 in ten minutes, in small and large amounts.

The campaign committee was:

E. T. Stotesbury, general chairman.
Benjamin Rush, general vice-chairman.
Arthur H. Lea, executive committee.
Dr. William H. Walsh, general secretary.

Wm. H. Walsh.

### Health Insurance and Hospitals

The publication of a draft of an act for universal health insurance, by the American Association for Labor Legislation, has given this movement a new impetus. Although the draft and the accompanying explanatory material represent three years' study by many of the country's experts, the draft is presented in tentative form to elicit discussion and constructive criticism from interested parties. Upon the basis of the criticism received the Association hopes to prepare a complete bill, which will be introduced into the legislatures of 1916.

The present draft provides that all manual workers and others earning less than $100 a month shall be insured, and that each insured worker will receive a physician's treatment, hospital and nursing care, in addition to medical and surgical supplies, and a cash benefit for a maximum of twenty-six weeks of sickness, each weekly payment being equal to two-thirds of the wages. The wife of the insured man will have special care at childbirth and, if she is also insured, a special cash benefit equal to eight weeks' sick benefit. Furthermore, the act offers medical care to the family and funeral benefit for the insured.

Of special interest to the readers of THE MODERN HOSPITAL are the provisions for hospital care. The bill provides that hospital or sanatorium treatment may be substituted for the other forms of medical service, with the consent of the insured or his family. Where hospital treatment is imperative, the insurance associations may require this and may suspend cash payments during the refusal of the insured to enter a hospital. If the insured has members of his family dependent upon him, a special benefit equal to one-half of the sick benefit is paid to them while the patient is in the hospital. Hospital care may not be furnished for more than six months and is to be provided in hospitals with which the insurance associations have made financial arrangements, or in institutions maintained by the associations themselves.

With this exception, the machinery for administering the medical care has not yet been outlined, because the Association believes that this can be framed best from suggestions received from the medical profession.

Now is the time to present criticisms. Copies of the bill and explanatory literature may be had by addressing the Association at 131 East 23d street, New York City.

# PHILANTHROPY AND THE PUBLIC HEALTH

THE NEW YORK ASSOCIATION FOR IMPROVING THE CONDITION OF THE POOR.
BAILEY B. BURRITT, General Director.
WILLIAM H. MATTHEWS, Director,
*Department of Family Welfare.*
DONALD B. ARMSTRONG, M. D., Director,
*Department of Social Welfare.*

### A Nuremburg of the Unemployable

BY HOLLAND HUDSON

This is the story of the most unique toy-shop in the world, where old and crippled men are given employment making charming and inexpensive toys. The story includes a suggestion for Christmas benefactions to children in New York City.

One of the most difficult problems which confronted the Mayor's Committee on Unemployment in New York City last year was the task of finding work for men whom age, accidents, and illness had rendered ineligible for heavy tasks, but who were willing and eager to do any work within their strength to earn their living and retain their self-respect. Especially this problem challenged the interest of Miss C. S. Foster—so much that she set her keen woman's wit at work to solve it. And she did solve it.

The mad war which has plunged the whole world into unhappiness has struck even at the happiness of children by shutting off completely the supply of imported toys. American tradesmen have tried to fill the breach with wonderfully realistic dolls, with ingenious mechanical playthings, but they have failed to produce toys that children love as they love the wooden products of old Nuremburg. The American doll is too perfect, it lacks the faults for which one is loved; the American toy leaves nothing

Fig. 1. The main work room.

Fig. 2. Cutting out the toys.

to the imagination, that especial suzerainty of childhood.

Miss Foster has solved her unemployment problem by setting the old and crippled men to work at the manufacture of lovable toys—handsomer and more American products than the contents of the old Noah's arks—but just as quaint. The toy-shop means to the men employed a steady job at which they can earn a living; to parents and lovers of children it means a fresh supply of welcome gifts at reasonable prices; to children it means lovely St. Bernard dogs on wooden wheels, pussy-cats in black and white, tortoise shell or Maltese coloring, with their backs magnificently arched, bears and tigers and dicky-birds, and a whole farmyard of familiar animals.

Bishop Greer, of the Episcopal diocese of New York City, was the first to give Miss Foster's plan substantial aid by allowing her the use of almost the entire diocesan house, made famous by the late Bishop Potter, as a toy-shop. Miss Foster began with about twenty men. In a short time the number doubled and tripled and is still growing.

Anticipating continued expansion and recognizing the community value of the toy-shop, the New York Association for Improving the Condition of the Poor has absorbed it as one of its manifold activities, retaining Miss Foster as manager.

The men who make the toys are as interesting as the toys they make. They have been sailors, farmers, carpenters, and machinists; most of the trades are represented. Today they are too old, or too handicapped physically to qualify in their old occupations. One of the illustrations shows a machinist, deprived of one eye in an industrial accident, cutting out two dimensional animals with a foot saw. The animals are painted by a skilled draftsman, whom failing eyesight has deprived of his old occupation. There are several pairs of crutches in the shop.

When I visited the shop to take photographs, reproduced with this article, I was prepared to placate some fussy old men who didn't want their pictures taken. I found, instead, the most cheerful and harmonious group of craftsmen I have ever met. They were interested in the toys and their destination, and most of all in the fortunes of the toy-shop. Here is a work-room that needs no stereotyped placard instructing the employees to smile; the smiles grow out of the opportunity to work; they go into the toys as they are cut out and painted, and I know they reappear on the faces of the children who get the toys.

This Christmas the Association for Improving the Condition of the Poor offers a new avenue of Christmas giving through the toy-shop; it proposes to those who send children's gifts to hospitals and poor homes that they send toys from the toy-shop, thus helping to provide work for these men while at the same time giving pleasure to the children. The toys cost from twenty-five cents to a dollar each. The fifty-cent toys are in the greatest variety and no less attractive to the child's eye than the larger ones. The suggestion of the Association is that those who wish to play Santa Claus for the poor and sick children

Fig. 3. The painter.

Fig. 4. A venerable craftsman.

Fig. 5. Where toys are sawed out and painted.

shall multiply fifty cents by the number of little folks they wish to befriend, send the amount to Mr. George Blagden, treasurer, at 105 East Twenty-second street, and give instructions for the toys to be delivered at the shop to the representatives of the hospital or institution for the Christmas stockings. This is what the A. I. C. P. means when it says that "every dollar does a double duty when spent for toys from the 'Old Men's Toy-Shop.'"

## PRAISE FOR RETIRING SUPERINTENDENT

### Mrs. Hertzler, Eleven Years Superintendent of Kansas Institution, Quits Hospital Work

Mrs. Edith D. Hertzler, R. N., for eleven years superintendent of the Halstead Hospital, Halstead, Kansas, has retired to private life. This is a slight tribute from one who knew of her work, to the untiring, ceaseless devotion of a superintendent to an ideal.

It is no small mark of the ability of the retiring superintendent that during her management of the institution the original building and grounds were purchased from the Mennonite Charity Association, an incorporated training school for nurses established, and a modern fireproof hospital building erected.

As the head of the training school, Mrs. Hertzler was devoted, not only to the highest professional interests of the nurses in training, but she also gave much thought to creating a home atmosphere, so generally lacking in institutional life. Recreation for the nurses not infrequently took the form of trips under the chaperonage of the superintendent to neighboring cities to witness good plays or opera. Often at the noon hour she would read aloud from some good book, and it was her constant endeavor to direct conversation away from professional topics, the bane of hospital life.

Mrs. Hertzler is the wife of Dr. Arthur E. Hertzler, of Kansas City, Mo., and Halstead Kas. In addition to her duties as superintendent of the hospital, Mrs. Hertzler has devoted much time to assisting her husband in his researches. "To My Wife," the dedication of a treatise on tumors by the doctor, bears testimony of the truly helpmeet qualities of Mrs. Hertzler.

Mrs. Hertzler is a member of the American Hospital Association.

## DR. WAYNE SMITH PASSES AWAY

### Superintendent of Harper Hospital, Detroit, Succumbs to Cerebral Hemorrhage at the Early Age of Thirty-Nine Years—A Splendid Administrator Gone

Dr. Oswald Wayne Smith, for the past two years superintendent of Harper Hospital, Detroit, died at his home in that city on Friday, November 12, of apoplexy. He had been well and strong until a few days before his death, when he was found unconscious and suffering, according to the physicians, from a cerebral hemorrhage. He rallied shortly after the attack, but undoubtedly the hemorrhage continued and he relapsed again and was unconscious to the end.

Dr. Smith was thirty-nine years of age and was a highly educated and cultured man, and was one of the best trained hospital administrators in the country. Before he took charge of Harper Hospital he was superintendent of the St. Louis City Hospital, a thousand-bed institution, for fifteen months, and previous to that had been superintendent of the Washington University Hospital for four years.

In each of his former offices he made an excellent reputation, and since his appointment at Harper Hospital acquired new laurels by a masterly administration of a great institution during a most perplexing period, during which an entire new building was planned and constructed, and the staff of the hospital completely reorganized.

Dr. Smith was graduated in medicine from Washington University Medical School in 1902. He leaves a widow and three sons, Levart, aged twelve; Wayne, ten; and Ames, six years of age.

The funeral took place in Detroit.

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The name of the New York Red Cross Hospital, Central Park West, at 100th street, has been changed to "Park Hospital," and the institution will no longer be associated with the American Red Cross Society. The Red Cross Hospital was founded in 1894 by the New York branch of the American Red Cross, under Miss Clara Barton, for the purpose of training surgeons and nurses for service in war. In 1898, during the Spanish-American war, the hospital was a nucleus for the formation of the New York Red Cross Relief Association. Its surgeons and nurses volunteered and were assigned to duty in Cuba. The present Red Cross plan of accepting surgeons and nurses from all reputable hospitals has rendered affiliation with a special hospital unnecessary.

# PREVENTION OF BLINDNESS
# MATERNITY

*Conducted by* CAROLYN CONANT VAN BLARCOM, R. N.,
*Secretary National Committee for the Prevention of Blindness;*
*Chairman Committee on Prevention of Blindness and*
*Midwives National Organization for Public Health*
*Nursing.*

## The Present Status of the Movement for the Prevention of Blindness[1]

BY EDWARD M. VAN CLEVE,
Managing Director, National Committee for the Prevention of Blindness.

Preventive medicine and preventive social service hold more than ever the center of the stage. It is estimated that the physician who serves his patient best is occupied more than half his time in finding ways and means to ward off disease instead of drugging it when developed; so that the Chinese way of paying the doctor when the family are well and cutting off his stipend when illness overtakes any member would seem to have some basis of fairness in the modern view. In social service it is far better to prevent a slum than to clean one up, to save a boy from vice than to cure a vicious habit, to preserve life—physical, spiritual—than to recover it or bemoan it. When preventive medicine and preventive social service are joined in the effort to help mankind there must result a saving of the most precious of our physical possessions and an addition to human joy.

In the movement for prevention of needless blindness men of the medical profession and the workers in the field of social betterment find a ground of common action and community of interest. The lay movement is about ten years old, and from the first it requisitioned the services of both physician and agent of the common weal; today the most promising work combines the activities of both in equal degree.

It is my present function to represent what many of us have for several years hoped to see established, namely, a national bureau of information, inspiration, and practical help, now a realized fact in the National Committee for the Prevention of Blindness. This committee is the union of the American Association for the Conservation of Vision and the New York State Committee for Prevention of Blindness, effected at the first of the year 1915. It proposes to become for the nation a clearing-house on all subjects connected with the conservation of vision and the prevention of blindness. Its aims are thus stated:

1. To endeavor to ascertain, through study and investigation, any causes, whether direct or indirect, which may result in blindness or impaired vision.
2. To advocate measures which shall lead to the elimination of such causes.
3. To disseminate knowledge concerning all matters pertaining to the care and use of the eyes.

Of its program only that part which has to do with publicity and education has thus far been entered upon, the field of research being as yet unattempted; and it may be some time before this sort of service can be essayed. The type of work it purposes to do is indicated by its earliest publications, its helpful personal service in several states, its authentic news department. As evidence of the committee's substantial character mention may be made of the membership of its board of directors, including four widely known ophthalmologists, a prominent obstetrician, four distinguished attorneys, representing, however, not the law, but each some form of philanthropic or social service, a university department head, a member of a school board and a city superintendent of schools, a principal of a school for the blind, an illuminating engineer, an efficiency engineer, two great business men—one from the far east and one from the middle west, the head of the National Children's Bureau, the head of one of the great Foundations for improving the conditions of the people, a man and a woman giving their life to the solving of problems of charitable service, and last and greatest, Dr. Louisa Lee Schuyler, the inspiration, the soul, the virtual author of the national movement, whose faith and far sight have made possible the effective organization of this attempt to serve in saving from blindness all we can of the innocents yet unborn and the weak and helpless and ignorant.

Former president of the United States William Howard Taft received a cordial invitation to become Honorary President of the National Committee, and accepted election to this office; and, expressing their warm interest and approval, a number of other notable men and women have accepted election as honorary vice-presidents: Miss Jane Addams, of Hull House, Chicago; Hon. Joseph H. Choate, diplomat, publicist, philanthropist; Hon. Thomas P. Gore, Senator from Oklahoma; Miss Winifred Holt, founder of the New York Association for the Blind, and friend of the blind; Dr. Abraham Jacobi, Nestor of the medical profession; Dr. David Starr Jordan, educator and President of the National Education Association in this year 1915; Miss Helen Keller, literary genius; Hon. Theodore Roosevelt, former President of the United States; and Mrs. Ella Flagg Young, Superintendent of the Chicago Public Schools.

Fig. 1. Cheap eyeglasses are a menace to eyesight.

To strengthen the hands of this committee, we invite the assistance of all in the interests of those already blind. You know how needful this service is, how pitiful it is that year by year a hundred boys and girls who should not have become blind are entering our schools, and that hundreds more are going through life handicapped by defective vision from one cause alone, the inflammation of

[1]Paper read at the meeting of American Association of Instructors of the Blind at Berkeley, California.

Fig. 2. Pennsylvania State School for the Blind at Overbrook, Pa.

the eyes of the new-born. We want you to become members of the committee and lend us your aid; we want to serve you in your own efforts to cancel the effects of ignorance and neglect and misfortune.

Ophthalmia neonatorum continues to send to the schools for the blind a large percentage of unfortunate children. I am gratified to be able to announce a reduction in the rate to 15.1, 28 schools reporting.

PROPORTION OF PUPILS NEWLY ADMITTED TO SCHOOLS FOR THE BLIND DURING THE PAST EIGHT YEARS WHO ARE BLIND FROM OPHTHALMIA NEONATORUM

| School year | No. of schools | Total new admissions | Pupils blind from O. N. | Percent |
|---|---|---|---|---|
| 1907- 8 | 10 | 290 | 77 | 26.5 |
| 1908- 9 | 14 | 300 | 68 | 22.6 |
| 1909-10 | 13 | 325 | 67 | 20.6 |
| 1910-11 | 15 | 351 | 84 | 23.9 |
| 1911-12 | 24 | 415 | 88 | 21.2 |
| 1912-13 | 21 | 386 | 88 | 22.7 |
| 1913-14 | 19 | 428 | 84 | 19.6 |
| 1914-15 | 28 | 602 | 91 | 15.1 |

The percentages for eight years are: 26.5, 22.6, 20.6, 23.9, 21.2, 22.7, 19.6, 15.1. Are we beginning to make an impression? So we fondly hope. About one-fourth of all children in thirty schools reporting are blinded by this one disease. Agitation and education must continue not five years, nor ten years, but *all* years. There is no occasion as yet, nor do I believe there will be for a generation, to let up. Improvements in the laws have taken place in several states, and the hands of the workers for prevention of blindness have been strengthened during the past legislative sessions.

Increasing interest and greater accuracy are evident in the reports from the several schools for the sightless. Seven years ago ten schools were able to furnish statistical information, most of it very valuable and accurate; in 1915, 28 schools reported, and there is shown a greater attention to causes of blindness and interest in its prevention. Some states are putting this work of prevention of blindness in the hands of the school authorities. Arkansas gave Superintendent Hinemon a fairly liberal appropriation for spreading the news that half of all blindness is needless. Indiana has given the task of carrying forward this movement into the hands of the state school. Minnesota entrusts to its school for the blind the propagandism that will deplete its halls.

The midwife problem continues to be acute in some sections. The question is still one for debate whether midwives should be adequately trained, examined and licensed, or should be eliminated in our country. The latter is impracticable in some sections, but in others is entirely practicable, and many believe desirable. There are all stages of opinion between the extremes of intolerance and cordial recognition. The former is perhaps well illustrated by a statement of a prominent worker in this field, who, after careful study of the midwife situation, said: "There is only one good midwife in the state of ———, and she's not any good."

Little attention has been given heretofore to the instruction of the public, particularly parents and those having charge of young children, as to the possibilities of loss of sight through measles, scarlet fever and other diseases of childhood. The National Committee has issued as its Publication No. 1 a booklet dealing not only with ophthalmia neonatorum, but with these other diseases of childhood which produce so many of the cases of blindness among the young. Many children are permitted to go blind through carelessness or ignorance at the time of suffering from such diseases.

School inspection is becoming more prevalent and has a better character. The ordinary school inspection with which many of us are familiar leaves much to be desired. The improvement, however, is worth noting, and there will surely be a great change for the better as respects children's eyesight when inspection becomes universal, as it ought to be, and effective, as it can be.

Trachoma was formerly very prevalent in New York City, but the efforts of enlightened medical men and an aroused school board have resulted in a diminution of this trouble until there is very little in the metropolis, and that of a very mild type. The immigration office strives to be careful and to refuse entry to those who have this serious disease. In Boston the medical immigration au-

thorities have been able to stamp out trachoma pretty effectually. In the mountains of Kentucky, Virginia, West Virginia and Tennessee there has been a prevalence of trachoma to an alarming degree, but the United States Government, having become aroused to the condition, is handling the situation with its usual thoroughness. Similarly, among the Indians, trachoma having progressed so as to prove a great menace, the Government has taken strong means to blot it out. This disease calls for drastic treatment and watchful care.

Whether wood alcohol is becoming more dangerous as it is more highly refined, or whether we are hearing now of deaths and blindness resulting from its use, whereas in the past it was not looked upon as a dangerous cause of these calamities, is a matter of opinion; but there have been in recent years accounts of many deaths and considerable blindness from drinking wood alcohol or breathing its fumes. Progress is being made in the effort to have the name absolutely eliminated, the liquid marked "poison," and in these efforts the leading manufacturers are lending their assistance.

The passing of workmen's compensation laws is becoming a habit with the legislatures of the various states. Blindness from accidents in the industries will therefore become less according as these laws are properly enforced. The "safety first" movement is helping greatly in this particular, and may serve the purpose of arousing an active interest in the prevention of blindness in states where the matter is not made the subject of legislative enactment. There remain, of course, the many cases of accidental blindness that can not be taken care of by law nor avoided except by knowledge and care on the part of parents and the possible victims themselves. Education on this subject is still very necessary.

Fig. 3. Various preparations and drinks that are adulterated with wood alcohol, unlawfully, causing death or blindness.

Illuminating engineers are today more in demand than they have ever been before, and the American people are coming to the realization that there is such a thing as too much or ill-directed light as well as insufficient light. Our cult acknowledges indebtedness to the illuminating engineers and forms a working combination with them in the movement for the conservation of vision. Much still remains to be done so long as children in school rooms are seated with their faces toward openings or school rooms are ill lighted; as long as factories and other places where workers are engaged have not the proper means of illumination.

A field of interesting study is opened up by the question of the proper sorts of type, quality and color of paper, styles of binding, et cetera, that go to the making up of our school text-books as well as of the magazines and books that are used by adults. This is not a field for legislation, but is a subject that is attracting attention among enlightened school authorities and the members of the medical profession.

A most notable contribution to the cause of prevention of blindness is that made by the American Medical Association through its Committee on Conservation of Vision. This American Medical Association Committee was for some years directed by Dr. F. Park Lewis, under whose inspiration the lay movement had its early growth. For two years it has been under the direction of Dr. Frank Allport, of Chicago. He developed a plan for lectures, utilizing the talents of men in the profession and the machinery of the American Medical Association. Each state, through a state manager, arranges for lectures throughout the state, the effort being made to have not less than one in every county, and as many more as practicable. All this work is done by the members of the profession without compensation, and in many cases the lecturer has paid his own expenses.

I wish at this point to pay my respects to the medical profession, or, at least, that portion of it with whom it has been my good fortune to associate in a somewhat unusually intimate way—intimate for a layman—during the seven years of my special connection with prevention of blindness work. They have won my respect and admiration for their interest in social service. Unselfishness and marked devotion to the cause of public welfare to a degree hitherto unsuspected have been disclosed in these intimate relations. Willingness to help in the cause of prevention of blindness and to serve the workers in this field has been shown so many times that too high praise cannot be spoken of these choice spirits.

As a result of the lecture campaign of 1914-15, Dr. Allport's report to the American Medical Association declares 38 states in cooperation, 518 lectures delivered, 120,000 people in attendance. Further, great interest has been manifested in the localities where the campaign had been pushed in correction of bad eye conditions through school inspection and operations secured privately or at public instance; laws have been enacted; much publicity has been obtained. Strong encouragement for a continuance of this specialized service is indicated in the conditions which this report discloses, and all workers for the prevention of blindness will wish more strength and even greater success to this committee of medical men.

Workers have every reason to be encouraged in the belief that advance is being made, that the field is being worked; there is encouragement also in the appreciation of press and public of this service to humanity and the state. More strength to us all!

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A hospital for laboring men and their families, designed to serve as a social center as well as to care for the sick, is projected at Ensley, Ala. It is planned to operate in connection with the hospital a free kindergarten, a free kitchen for school children whose parents are too poor to provide proper nourishment; a mothers' club in which the mothers will be taught the proper care of infants, the hygienic keeping of the home and the correct manner in which food should be prepared; and a fathers' civic association in which the men can be trained to save and economize by proper management of their earnings. It is also hoped that the laboring people may be made to realize their importance to the community and inspired with a sense of civic service by means of study classes, lecture classes and through personal contact, by which correct information with regard to social conditions and problems may be disseminated. Rates for hospital service are to be fixed at a low figure in order to eliminate the charity idea so far as possible. Rev. J. W. Fulford, rector of St. John's Episcopal Church at Ensley, is one of the most active promoters of the movement.

# SOCIAL HYGIENE
# VENEREAL DISEASES

Conducted by WILLIAM F. SNOW, M. D.,
*General Secretary, The American Social Hygiene Association,*
105 West Fortieth Street, New York City.

## Popular Education in Social Hygiene

"The Campaign Against Syphilis,"[1] a pamphlet issued recently in London, and based upon the evidence taken by the British Royal Commission on Venereal Diseases, is one of the latest and most convincing of documents intended to bring to the effectual attention of people some of the vital facts about these diseases.

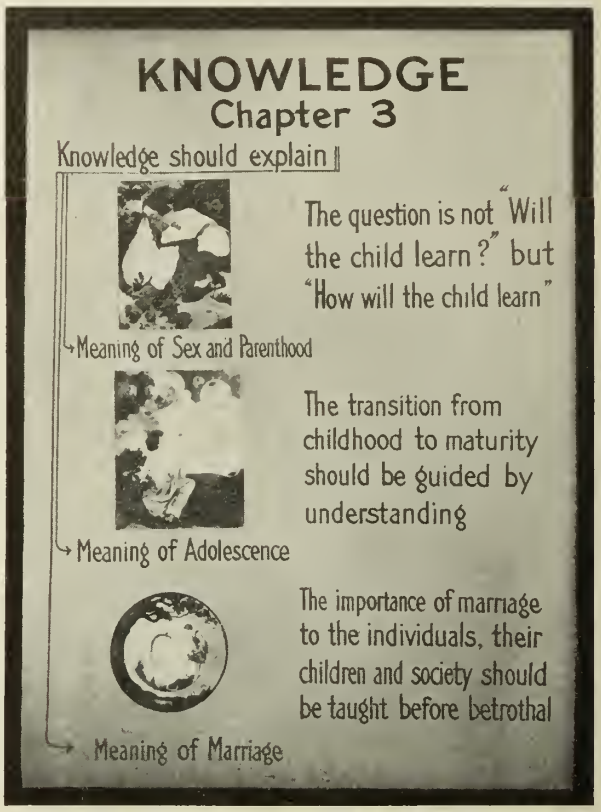
One of the most influential factors leading to the appointment of the Commission is described as follows:

GUIDE, PHILOSOPHER AND FRIEND
It is the privilege and duty of parents
TO GUIDE
their children in the early development of character and morals
TO GIVE
them their first information about sex and Parenthood
TO BE FRIENDS
and comrades with them and to make home attractive

Panel exhibited by the American Social Hygiene Association at the Panama-Pacific Exposition.

"On July 22, 1913, there was published in the *Morning Post* a letter, signed by the Presidents of the Royal Colleges of Physicians and Surgeons of London and by 36 other leaders of the medical profession, appealing for the appointment of a Royal Commission to inquire into the present state of our knowledge of venereal diseases, and to advise what steps should be taken for their prevention and cure. The following is an extract from this letter:

" 'There has always been a conspiracy of silence as regards venereal diseases. The time, however, has come when it is a national duty to face the facts and to bring them prominently to the notice of the public. When the subject was discussed last year at the Royal Society of Medicine it was stated without contradiction that in London alone there are forty thousand new cases of the gravest form of the disease every year, and in the United Kingdom as a whole a hundred and thirty thousand such cases. The worst form of venereal disease is highly contagious and dire in its effects. It claims its victims not only from those who have themselves to blame for contracting it; it is one of those diseases that may be transmitted from parent to child, so that the offspring of a sufferer is born with the virus actually in its tissue, to cause, it may be, hideous deformity, or blindness, or deafness, or idiocy, ending often in premature though not untimely death. Innocent members of the public, wives, children, doctors, dentists, students, and nurses are among those who during the routine of their ordinary daily lives are often accidentally called upon to pay a tragic penalty for the wilful blindness that ignores its existence. There is a great volume of evidence that locomotor ataxia and general paralysis are its belated manifestations. We are living today in a new era as regards diagnosis and treatment. The microbes responsible for these diseases have been discovered in recent years; means of diagnosis far in advance of previous experience have been elaborated and treatment has been enormously improved. The time is therefore appropriate for an organized effort on a comprehensive scale to reduce the incidence of these diseases. The experience of the Royal Army Medical Corps during the last few years has shown the enormous reduction in all forms of the disease that can be brought about as a result of systematic effort. Organized effort among the civilian population is impracticable until the public conscience has been aroused, and can only be attempted after a full and authoritative investigation.' "


KNOWLEDGE
Chapter 3
Knowledge should explain
The question is not "Will the child learn?" but "How will the child learn"
Meaning of Sex and Parenthood
The transition from childhood to maturity should be guided by understanding
Meaning of Adolescence
The importance of marriage to the individuals, their children and society should be taught before betrothal
Meaning of Marriage

Panel exhibited by the American Social Hygiene Association at the Panama-Pacific Exposition.

The venereal diseases are defined as "the diseases which are the result of, and may be caught in impure sexual intercourse, and which may be given by an innocent mother to her unborn child, owing to her having been infected by her husband." Their nature, communication, and effects are described in plain terms, and responsibility, treatment, and prevention discussed.

Regarding prostitution as the source of these diseases, it is said that—

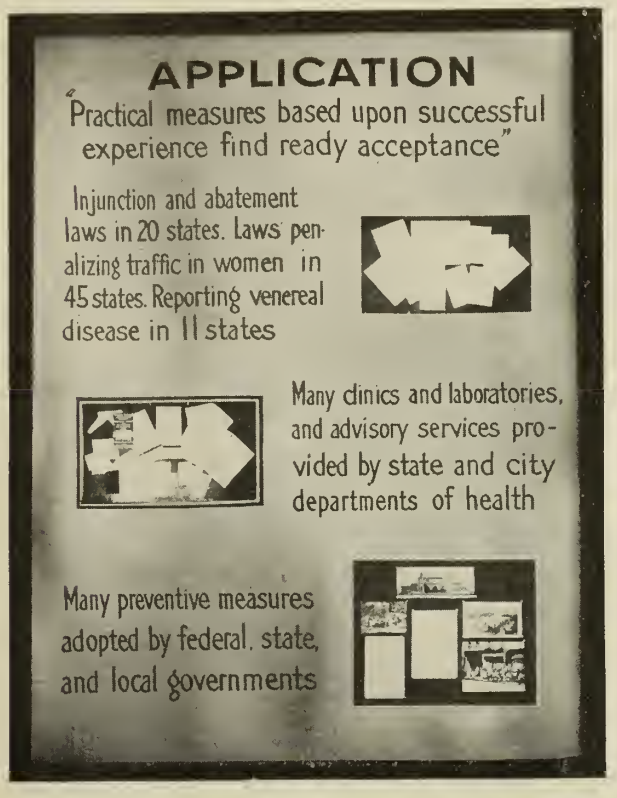
"This evil flourishes today, just as cholera and small-pox and ague used to flourish in England, not because it possesses any resistless essential power in itself, but because good, respectable, well-meaning, upright—you can use any word you like to describe yourself—people are more or less frightened or imposed upon by the seeming strength and permanence of the evil, are paralyzed by their own failures and weaknesses, are in a greater or less degree slothful, flabby, selfish, cowardly, blind, and dull. Certainly one of the root causes is that, to use a popular phrase, we take these things 'lying down.' We look upon prostitution as we used to look upon consols and the House of Lords as one of the great certain unvarying everlasting realities. . . . Is it reasonable that the greatest evils should be encouraged because a few, however powerful they may be, choose to decree against reason

[1]The Campaign Against Syphilis: By F. W. Giles, M. B. King & Son, London, 1915. 6d.

and experience that such evil is a necessity of existence. . . . In modern social life few things are more remarkable than the immense power wielded not only in minorities, but by minorities as contemptible in numbers as in principle. . . . When we come to go more minutely into the question of the cause of submission of the good, we shall find that 'expediency' and an indisposition to oppose anything which has been advocated with great persistence and energy, are the only explanations offered, as well as the ever-prevailing excuse.

"Possibly the time will come when it will be proved that to speak of moral evil as an 'atmosphere' or as a material influence is not a forcible figure merely, but strictly correct.

"The counteracting atmosphere, which we must all do our best to help to create, will be free from cant and pharisaism, but free also from sentimentality and time-serving tolerance. It will be at once unyielding and charitable. In it will mingle hope and fear and reverence. The spirit whose breath will keep it from stagnation will not recklessly uncover and stir up the depths of shame and depravity."


APPLICATION
"Practical measures based upon successful experience find ready acceptance"
Injunction and abatement laws in 20 states. Laws penalizing traffic in women in 45 states. Reporting venereal disease in 11 states
Many clinics and laboratories, and advisory services provided by state and city departments of health
Many preventive measures adopted by federal, state, and local governments

Panel exhibited by the American Social Hygiene Association at the Panama-Pacific Exposition.

The following paragraphs may well serve as the basis of a working program:

"If we drop figures and return once more to the level of bare fact, it is certain that the Royal Commission in its final report will lay great stress on the necessity of making it as easy as possible for those who are suffering from venereal disease to secure first-rate advice and treatment. It will no doubt advise the use of public money in order to place modern means of diagnosis and treatment within the reach of the poorest, and the most extensive possible program of education and warning for the young, and for those diseased. But it will certainly, as far as one can judge, not recommend much in the way of legislation, nor the use of compulsion for the civilian population in any shape.

"It will suggest that the 'stigma' or reproach attached to these diseases is one great obstacle to people who might otherwise be willing to apply at once for treatment.

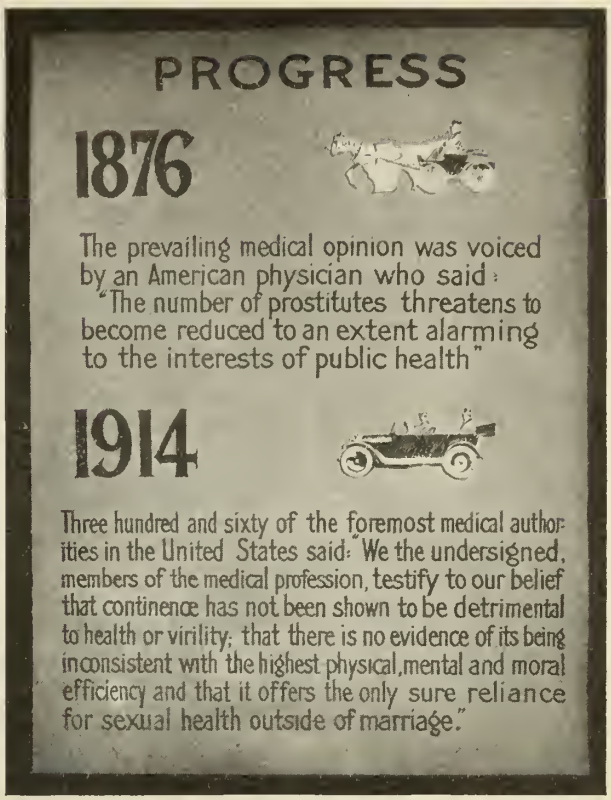
"Now, if there is to be no compulsion there must be a helpful atmosphere; a feeling of helpfulness in the air, sprung from the sense of a common responsibility, and a common burden to be borne.

"But surely it would be a pity to make too much of the fear of reproach. Our men are not wanting in common sense, and certainly they are not cruel, nor reckless about the sufferings of women and children.

"Any man who reads this pamphlet fairly must admit that it is common sense to do the best he can to avoid the risks to himself and others that it describes; while, as for the women and children, well—we take it for granted that they go first into the boats, because this has become a national habit. When it has become a national habit to put them first in what is much more than a matter of mere life or death, syphilis and prostitution itself will be in a fair way to disappear.

"Still it is useless to pretend that the responsibility lies with equal weight upon us all, or to adopt the policy of whitewashing corruption. Unclean living, whether occasional or habitual, is not a misfortune, but a vice. It would be nothing short of a public calamity if the idea gained acceptance that syphilis is not to be more abhorred than smallpox, and that he who carelessly, or after warning, transmits its poison to his wife and children, ought not to be held guilty of a crime."

The popular reception which is accorded such documents both in this country and abroad is reflected in the interest shown in social hygiene exhibits such as that of The American Social Hygiene Association at the Panama-Pacific Exposition, certain panels of which are reproduced herewith. It is safe to forecast a great increase in the number of such authentic documents based upon scientific studies of the questions involved within the next few years.


PROGRESS
1876
The prevailing medical opinion was voiced by an American physician who said:
"The number of prostitutes threatens to become reduced to an extent alarming to the interests of public health"
1914
Three hundred and sixty of the foremost medical authorities in the United States said: We the undersigned, members of the medical profession, testify to our belief that continence has not been shown to be detrimental to health or virility; that there is no evidence of its being inconsistent with the highest physical, mental and moral efficiency and that it offers the only sure reliance for sexual health outside of marriage."

Panel exhibited by the American Social Hygiene Association at the Panama-Pacific Exposition.

### New Hospital Regulations for Kansas City

The Kansas City (Mo.) Hospital and Health Board is given authority to control all private hospitals in the city. Following are the requirements affecting such institutions, which were established by a resolution recently adopted by the board:

No person who does not hold a state license to practice medicine in Missouri and who does not appear in person before the Hospital and Health Board, will be granted a license to operate a hospital.

Applications for licenses must be made out on blanks furnished by the board, and every application must be indorsed by four reputable citizens, three being physicians in good professional standing.

Hospitals must have at least ten beds and be provided with a fully equipped and sanitary operating room for emergencies.

A sufficient stock of suitable drugs must be carried, except in osteopathic institutions.

Major operations may not be performed by any but a surgeon or physician of recognized standing.

A licensed physician or graduate nurse must be promptly available at all times.

The names, previous addresses and qualifications of all nurses employed must be filed with the Hospital and Health Board at least every three months.

Full inquiry into all births, also into any deaths from seemingly avoidable operative shocks, is provided.

Only hospitals devoting twenty percent of their proceeds exclusively to charity work and operating free clinics approved by the Hospital and Health Board will be classed as charity institutions.

# DISPENSARY AND OUT-PATIENT WORK

Conducted by MICHAEL M. DAVIS, Jr.,
*Director of the Boston Dispensary.*

### Health Insurance and the Dispensary

Among the thousands of physicians, hospital superintendents, and hospital workers of all kinds, who are visiting the San Francisco Exposition this year, how many have spent an hour at one of the most interesting and novel medical undertakings of the country, that of the University of California, in providing "Health Insurance" for its seven thousand students?

The University belongs to the state and is supported by state funds. There are no fees for tuition, only some small fees for special purposes; among these is a fee of $4 annually for the care of health. This is compulsory, every young man or young woman (needless to say the University is co-educational) must pay it.

This is what they get for their money:

A complete physical examination at the opening of their college course.

Medical advice based on this examination from the examiner, who, for the men, is the Professor of Hygiene in the University or one of his assistants on the staff; for the women, a woman physician, also holding a University position.

Medical care for minor illnesses—everything from a cut finger to an attack of indigestion or homesickness. This is given in the University dispensary, located on the campus at Berkeley, California. Of the organization of this dispensary, a word will be said later.

Hospital care in serious illness in the University infirmary, which is in the same building as the dispensary, and provides forty beds.

The $4-a-year fee covers all expenses, whether the student has occasion to see the doctor only once at his annual examination, or whether he is at the dispensary fifty times, or has an attack of typhoid that lays him up in the hospital for six weeks. The only extra fee is in case of operation, and these fees are moderate.

The medical staff providing these services are University appointees, the chief of the staff being the Professor of Hygiene, who, as he also gives class instruction to the same students over whom he has medical oversight, comes in contact with his own pupils and with the whole student body in a many-sided way.

The $4 fee and the minor income from operations pays the whole expense of the service, including the hospital, the dispensary, the nursing, etc.

The dispensary itself is a pleasure to visit. It covers the ground floor of the building, of which the upper floors are occupied by the hospital. An average of about 100 visits a day are made by the students to the dispensary. A walk through the clinic will be enlightening to those who have always thought of a dispensary as a place where chiefly charity was dispensed. This institution has nothing to do with charity. It is a cooperative organization for the provision of medical service, self-supporting, like a mutual insurance company, only there are no mahogany offices for the vice-presidents. Students entering have a convenient room, simply furnished, to wait in, are registered, or re-registered at a desk, and pass to their clinics. The dispensary is open at separate hours for men and women, though urgent cases from either sex may be received out of the usual hours. Besides the general medical men, such specialties as eye, throat and nose, etc., are represented on the regular staff. The members of the staff of the University Medical School in San Francisco might, of course, be called in, if necessary, in obscure cases.

A nurse, picked both for her training and her personality, is on service in the institution for personal work with the students: what, in an ordinary dispensary, would be called "social service."

In considering the remarkably low cost for students, $4 a year, for this complete care, including hospital service, it must be borne in mind that these seven thousand persons are a selected body of young men and women, living under hygienic conditions, in a good climate and at an age when the amount of disease is at a minimum. On the other hand those who want to examine the statistics of the dispensary might be surprised at the large number of visits which these students pay there—30,000 a year—or more than 4 per student. This is explained when one examines the reasons which bring them to the clinic and find the comparatively minor diseases for which they visit the doctor—colds and scratches and little worries, which soon are set right and which do not progress to congest the lungs, or infect the blood, or upset the nervous system. Such a dispensary is a home of practical preventive medicine.

### Annual Reports

The time of year is at hand when the superintendent sits down by himself and says, "Now I must make the annual report." The fiscal year of many institutions closes September 30; with others, December 31; but the season of the deadly report is at hand either in fact or in near prospect.

Hospital reports have so generally made the reader hunt for anything about the out-patient department that it seems fitting to bring up the matter of annual reports at this time of year.

The annual report of a hundred-bed hospital in a middle-sized city includes 110 pages. They treated about as many patients in the dispensary as they did in the hospital. Except for but two paragraphs in the "Report of the Trustees," and one in the "Report of the Superintendent," nothing appears about the dispensary besides a few statistics. It is difficult to find that the hospital had a dispensary without hunting for it, for there is no table of contents, nor index; and the various reports of trustees, superintendent, superintendent of nurses, etc., are so sandwiched in amid tables of operations performed, lists of diagnoses, obituaries of benefactors, photographs of buildings, expense accounts, and lists of contributors, in a sort of general hash.

This is typical of 80 percent of existing hospital reports. The lack of adequate space for the dispensary or out-patient department, is one of the least of the troubles; but since the dispensary is the subject of this Department of THE MODERN HOSPITAL, the following is to suggest items which a superintendent or committee of trustees, might well consider in making up the annual report for the year of grace now closing.

First: Is it not well to consider whether a report is

meant for the people who already know about the hospital. or for those who do not yet know much about it? If for the former, it should be interesting; if for the latter, it merely needs to be instructive. The hospital that has all the money it needs can afford to present a dreary report; for any other hospital, is not an uninteresting report an expensive investment?

With this in mind, the following points may be mentioned:

1. *Arrangement.* The opening portion of the annual report should give an idea of *all* the divisions of the hospital, and should put them in some perspective. Every report should have a table of contents.

2. *A Special Report for the Out-Patient Department.* Every hospital in which the number of out-patients equals or exceeds the number of ward patients should give a special section of its report to the out-patient department, as a division of the hospital work. Such a report might be a section of the trustees' or superintendent's report, or it might be a report of a special committee on the out-patient department. Such a special report ought to contain:

An idea of the general organization of the dispensary and of its medical service. It is probably well to print detailed statistics of the dispensary in the statistical section of the report, and only the general figures here.

Changes during the past year which have taken place in relation to such matters as building, equipment, medical staff, executive staff, clinical methods, social service, etc.

Something about the problems of the work. The public really ought to be given the impression that the authorities of the hospital are *thinking* a little about the dispensary as well as running off clinics.

3. *Out-Patient Statistics.* The report should state, for the period covered by it, (1) the number of patients, classified by clinical departments; (2) the number of visits made by these patients, classified by departments; (3) the average number of visits per patient for each department.

Statistics of special work—x-ray, social service department, etc., should be given.

4. *Finanees.* The cost of the out-patient department should be included in the "Treasurer's Report," itemized so far as practicable, and the income from fees paid by patients, if any.

5. It is useful to place somewhere in the report the rules covering the admission of patients (to the dispensary as well as to the hospital wards), the days and hours at which clinics are open, the fees charged, if any, etc. Such information is often convenient for persons, or to charitable agencies, who might have occasion to refer patients to the hospital.

### Trust Fund of $20,000 for Artificial Teeth

The coroner of London at a recent inquest discovered a piece of meat three inches long lodged in the larynx of a man whose death was caused by suffocation. Dr. Waldo, in his report of the inquest, called attention to the fact that the man had but the remains of two teeth on opposite sides of his mouth—and laid stress on the urgent need of funds for providing the poor with artificial teeth. The report also cited another case in the same district where death was practically the result of starvation owing to want of teeth; and it pointed out the numerous ills—mostly preventable—due to the lack of teeth. Mr. Edwin Tate, the brother of the founder of the Tate Gallery, read the report of this inquest, and as a direct result the "Edwin Tate Trust Fund" of $20,000 was started at St. Bartholomew's Hospital. The scheme has been approved by the Charity Commissioners, and the editor of *The Hospital*, London, commenting on the new departure, expresses the hope that another benefactor may be found to provide a similar trust fund at Guy's Hospital.

The city emergency hospital at Butte, Mont., has lately been renovated throughout and fitted up with new equipment.

# QUERIES AND ANSWERS

### Soiled Dish Baskets

To the Editor of THE MODERN HOSPITAL:

Can you tell me where I can find rubber or wire baskets to fit in sinks for washing dishes? I find so many of our dishes crack and chip from striking against the porcelain.

RUTH G. CLARK,
Hudson City Hospital, Hudson, N. Y.

There are no such baskets as you are thinking about on the market, and I am quite sure you will have to have them made. Almost any woven-wire works can make the baskets you refer to and they will put at the proper places small lengths of rubber tubing to cover the wire to protect the basket from shocks between the dishes and the sink or container; but far better than this will be for you to have these baskets made of wood or bamboo. Anyone accustomed to reseat chairs can make you just what you want, or a good carpenter can make these baskets out of the ordinary basket material used for marketing fruit and vegetables. These baskets should be very cheap, and while they will last a good many months if properly cared for, they will be inexpensive and consequently you can afford to change them as often as necessary.

Some years ago we had precisely this problem and we bought some wire letter baskets, such as are used on office desks. The wire was small enough to yield sufficiently to save the breakage of dishes and in order to fasten the baskets in the sink we used double hooks, "S" shaped, one hook to catch the basket and the other to go over the edge of the sink. Four of these hooks will do for each basket.

The main point is that there is nothing on the market that you can buy, and you are going to have to use your ingenuity to create something of your own. The above are merely suggestions along this line.

### Plans and Cost of a 25-Bed Hospital

To the Editor of THE MODERN HOSPITAL:

Can you furnish plans and probable cost for a modern hospital of twenty-five beds, with good-sized operating and sterilizing room? If not, can you give me information or address of someone who can give me the information I am seeking? M. A. D., Bath, N. Y.

There are no standard plans extant, of small hospitals, that would meet your problem; each hospital in each locality is a problem of its own and must be considered with a view to local conditions and local requirements. If you will give us some information about what you are thinking of in the form of a hospital, we shall be very glad to help you with some sketches that should be a nucleus upon which you can base your future development.

We ought to know about the site on which you propose to build, and its relation to corners and to the town, and if we can have a map of the town, showing elevations of surface, it would be a good thing. We should know whether the new hospital is to be an addition to a present institution, whether it is to take the place of one you now have, or whether it is to be an entirely new hospital. We

should know whether it is your intention to take care of all standard medical services, such as medical, surgical, obstetrics, children, tuberculosis and the infectious diseases; and if you have any well-defined notions about the relative proportions of these services we should like to know about them. If you are thinking about excluding any of these classes of patients, we should know.

We ought to know also whether you propose that the original twenty-five bed hospital is to be the completed institution or whether you are thinking about making this the first unit, that may be added to once or twice or more times to make a comprehensive group of, say, a hundred beds.

There should also be a simple survey made of your problem in the community; that is, we ought to know the chief occupations in the community; is it a mining, milling or manufacturing town, or what are the chief occupations of the people—because these facts have a large bearing on the probable proportion of the different classes of patients to be cared for.

What is the general financial status of your people? Are there many very poor people who would probably need free care, and if so, what proportion of the population; is there a large proportion of quite wealthy people who could be called on to bear more than their per capita share of the support of the hospital, and if so, about what proportion?

It makes a good deal of difference, also, how you propose to support your hospital after it is built; is it intended to be self-supporting from earnings from pay patients, and is it proposed that the amount of charity work shall be very small, or negligible, and if not, what are your sources of support for charitable purposes?

Will your town or county pay you to cover the cost of indigent patients?

It is sometimes quite easy to obtain money for the purpose of putting up a hospital building, whereas it might be extremely difficult to raise the necessary amounts to cover deficits each year, and you certainly ought to think about that before you build. It is a pretty bad thing to build a nice hospital and then be unable to support it.

### Preliminaries for a Small Hospital

To the Editor of THE MODERN HOSPITAL:

*Good Housekeeping* magazine has advised me to apply to THE MODERN HOSPITAL for information concerning the best way of raising funds for a modern public hospital. Also as to means for equipment and maintenance.

We have but a small private hospital in our town, though the people of the town and county are well-to-do, and there is a state university located here.

The university has but two years of medicine and does not particularly need a hospital.

I have been told that if a hospital is owned by the county politics will ruin it. The town is too small to maintain a hospital alone. We have a small hospital association, struggling in its first efforts.

I should like to be able to interest the women of my club in the modern hospital idea and be able to inform my friends interested in the cause.

Any help you may give me will be very much appreciated.

MRS. J. H. HOWARD,
105 Yale St., Vermilion, S. D.

You are setting yourself quite a task in attempting to create a hospital in your town, but you are also setting out upon one of the most interesting and attractive, and certainly one of the most serviceable, tasks that you could possibly undertake.

Let us first see what you are confronted with: Vermilion, according to the 1910 census, had 2,187 people; it has ten physicians. You have now one hospital, the Vermilion City Hospital, with eight beds, of which Miss Roxey Robbins is superintendent. If these data are wrong, please set us right. It is presumed you have grown considerably since the 1910 census was taken, and perhaps you have now four or five thousand people.

Please let us know the character of the population. We assume there are not very many paupers and probably a good many people in moderate circumstances, and not very many rich people. It may be presumed also that you have no large manufacturing establishments that furnish work to considerable numbers of your people, but rather that they are small merchants and mechanics and serve the community about, which is probably a farming community. Please let us know about this.

We ought also to think about whether the new hospital should be a general hospital, with facilities to take care of medical, surgical, tuberculosis, maternity and children's cases and the infectious diseases; or whether you want to rule out some of these diseases or some of these classes of patients.

We ought to think not only about the money to build the hospital, but the money to take care of its support in the future. This can be done in one of several ways: first, by participation of the town or county, in which case the hospital would take care of the dependent sick of the town or county, for which a regular per capita sum would be paid to the hospital; or private subscriptions can be collected from people of means who will agree to give fixed sums from year to year; this is a rather hazardous way to support a hospital, because people who are willing to give this year may not be in a position to do so next year; then there is the third way, viz., to make the hospital self-supporting by charging patients regular fees for their care. In a good many places all of these means are taken and such an arrangement might be possible in your town. But in any event you ought to be thinking about that part of it; it is dreadful to build a nice hospital and then be unable to find the funds either to open it or run it. Then the question of the location of the hospital comes up. You must think about whether it is to be down in the town or out in the country; in the former case, think about the noises and the dirt and smoke; in the latter case, think about the transportation for the patients, for doctors, and for the friends and relatives of patients. If your hospital is to be out in the country; that is, in a town the size of Vermilion, say a mile out of the heart of the city, you should think about a small farm and a garden, with a little dairy, and poultry, because these will cut your running expenses to the very bone.

Then, after you have decided about the situation, think about the sewerage and water, and fuel for your power plant, and perhaps electric current for your lighting, in the event that you decide not to put in an electrical installation.

The way to begin your work is for you to get together a committee made up of half a dozen prominent men of the town, including the surrounding country, and a half dozen women. Then the next thing to do is to plan what you want—and raise the money for it, but plan it first, and then make some simple sketches of the plan, and these plans would include costs. This part is where THE MODERN HOSPITAL can be of service to you, and its editors will help you with these plans. You need not employ an architect at this stage—that will come afterwards.

After you get your plans and costs, then you are ready to go before your people with a definite statement as to what you propose to do, showing sketches of how you propose to do it, with figures as to what it is going to cost—and then ask them for money.

It would be better not to consider a municipally owned hospital in a town the size of Vermilion; as you say, politics will be liable to creep in, at the expense of the sick and the hospital funds. You would a good deal better have a board of trustees direct the affairs of the hospital, and make an arrangement with the town or county to help out for the care of the poor.

With your woman's club as a nucleus you should have the making of a fine working group, but everybody will have to repress themselves and their ambitions in the interest of the whole proposition, and not look for personal aggrandizement.

Now, when you get far enough along, let us know, and we shall be very glad to help you along the next steps.

### To Meet a Difficult Situation

To the Editor of THE MODERN HOSPITAL:

The city of Tyler, Texas, together with Smith County, is contemplating erecting a city and county hospital, at a total cost of about $6,000, at an early date. Can you furnish data as to the number of beds that we could have for that money, with approximate cost of maintenance per day for each patient?

DR. ALBERT WOLDERT,
City Health Officer.

There is no printed matter that will be of very much service to you concerning your problem of a town and county hospital, but we shall be very glad to help you do what you want to accomplish.

For $6,000 we would not think of putting up a new building. You cannot possibly figure on any kind of a hospital for less than about a thousand dollars a bed, and then you would have to figure about $200 per patient for equipment, so that you can see that your $6,000 would not go very far. We think the best way to do, if you possibly can, is to find an old residence that can be altered for your purpose. There ought to be in your town a residence of from ten to fifteen rooms that could be rented or leased pretty cheaply, and it is almost certain that you can make such alterations as would be necessary for, say, $2,000, and for another $2,000 you ought to be able to put in sufficient equipment at least to start on. You would not be able to lay in any considerable supply of such things as linens and blankets, but you could buy enough to start with. For a hundred dollars per bed you can put in a pretty fair equipment. A considerable item of cost will be the fitting up of the operating suite.

If you will look over your town and see if you can find an old residence, or even a factory building that has been abandoned, and give us a sketch of the interior as it stands now, with a description of the condition it is in, we shall be able to suggest changes that will make it a good hospital.

How do you expect to maintain the hospital after it is started? You had better figure on about $1.50 per day per patient. If you have cheap meat and cheap vegetables, and if you can get hold of a few cows or buy milk cheaply, and get your eggs at a low price, you ought to get this $1.50 down to $1.25 or perhaps even $1.00 per day per patient.

Suppose you start with a twenty-five bed hospital; you ought to run it for about $40.00 a day and this would pay and feed your help, feed your patients and buy current supplies.

One of the first things for you to get is a superintendent, and there are very good women who can be secured who would be best equipped to run such a hospital as yours. These women make good housekeepers, most of them are graduate nurses, and some of them know how to keep a simple set of hospital books; they are good buyers, and if you get the right sort, she will do more than all other agencies combined to fix the status of the hospital in the affections of the people, so that your financial troubles for the support of the hospital ought not to last long or be very serious.

Are you proposing to handle your hospital proposition under the Colquitt law, passed a year or two ago? If you are, there should be some taxes coming to you that will make up any deficit that you might have, although we see no reason why, after you get started, your hospital cannot be made self-supporting, unless you are proposing to take care of a considerable percentage of free patients.

With these suggestions you ought to be able to find a place to start your hospital, and if you can give us the sketch of the building we shall be able to suggest the necessary changes and tell you about what they will cost. Then you can go on to the next step.

### Soundproofing for New Wing

To the Editor of THE MODERN HOSPITAL:

We have recently built an addition to the Wheatland Hospital, consisting of a ground floor, a first floor, and a second floor. Between the first and second floors we laid hair insulating material as a sound deadener. This has not given satisfaction. We are now planning to put a steam laundry equipment in the basement, and wish to ask what you would advise to cut out the noise. This floor is not yet sealed, so that we can take any necessary measures. The flooring is cement, and the shaftings will be bolted to the floor, so that there will be no vibration. Please let us hear from you at your earliest convenience.

FRED W. PHIFER,
Wheatland Hospital, Wheatland, Wyoming.

Mr. Meyer J. Sturm, hospital architect, Chicago, answers this inquiry as follows:

I have had quite a bit of success by applying the deadening in the following manner: Over the rough flooring I have placed Cabot's heavy sheeting quilt and on top of this I have placed the ¾-inch or 1-inch strips of Flaxlinum, made by the Northern Insulating Co., St. Paul, Minn., these strips about 3 inches wide, fastening these down with 1x2-inch furring strips with as few nails as possible to get as near a "floating floor" as would be practicable. In placing the furring strips and the Flaxlinum under them it is absolutely necessary that they be placed off the joist centers so that none of the nails which are holding down these furring strips will go directly into the flooring, which is over the joists, or into the joists themselves.

I usually place the furring strip about 2 inches from the center of the joists. In this manner you avoid the "telephoning" of noise from one floor to the next below. This is not an expensive process, and is practically positive in its results. If I may make another suggestion relative to the shafting being bolted to the floor of the basement, why not run all the machines with individual motors, as it will not cost more than $200 or $250 in excess of having one large motor with the necessary expenditure of power and current when only one machine is running? This is the more modern method and is much more economical and positive and does away with the overhead or ground shafting entirely and makes every machine independent.

### Wants a Small Psychopathic Hospital

To the Editor of THE MODERN HOSPITAL:

We are planning to build a city detention hospital. I am writing to ask you if you know of any modern detention hospital anywhere, of the size that is suitable to our city. I know there is such a hospital at Milwaukee, but that would be too large for a city like ours. If you can give me any information, or any suggestion as to where I may obtain this information, I shall be under many obligations. I am a member of the city council of Mitchell, S. D., and vice-chairman of our board of health. Our city has a population of about 10,000.

STEPHEN D. VAN BENTHUYSEN,
Dean School of Commerce, Dakota Wesleyan University.

Unfortunately there are no specially designed psycho-

pathic or detention hospitals built to be connected with small institutions, or for a small number of patients.

There are only four specially designed psychopathic hospitals in the country: the Boston Psychopathic, which is a part of Harvard Medical School; the Phipps Psychopathic Clinic, which is a part of Johns Hopkins; the Bellevue Detention Hospital, connected with Bellevue, of New York, and the Chicago Psychopathic, which was finished about six months ago. Two of these hospitals have been presented at length in THE MODERN HOSPITAL and we are sending you copies which contain them.

Undoubtedly the psychopathic idea is growing, and it is growing away from what we used to call the "detention" hospital, because the modern psychopathic hospital differs widely from a purely detention institution. It has connected with it a staff of specially trained men, and it has a laboratory for doing a wide variety of work; and it is the intention of the modern psychopathic hospital to make a diagnosis and treat and send back to their homes a large proportion of the patients who are sent there. To give you an idea of the old detention proposition we might tell you that the Illinois law as it stands today provides that a patient may not be detained in the detention hospital longer than ten days, and must then be sent along to the hospital for the insane or returned to his home. In the new detention hospital, or, as it has been named in violation of the Illinois statute, the psychopathic hospital, patients are kept at the discretion of the attending medical men, and a very large proportion of them are able to go back home again cured of their troubles; as, for instance, post-typhoid manias and post-puerperal insanity, both due to the absorption of toxins, and both usually curable, but slowly so. We regard it as a crime for society to brand the mother of a family with the taint of insanity by sending her to a hospital for the insane, who happens to have a post-puerperal insanity, which is no more a family taint than an insanity acquired by a blow on the head would be. Really, the idea of these psychopathic hospitals is to prevent patients from being branded with insanity.

We are deeply interested in your problem and shall be more than glad to help you design a hospital if we can know all the conditions. We wish you would tell us more about your case. Is your institution to be operated as a part of the city hospital, and if so, how many patients pass through your city institution, and how many patients were detained in an improvised detention department during the last year or two? In other words, how many patients do you expect in the institution you propose? We have an idea that you don't need a building at all, but that a small wing or a floor of a wing would do.

Please tell us also whether you propose to hold court to try these cases and what is to be your method of procedure in that regard; are the trials held in public and by a court of record, or is it a purely medical function, and are the cases heard in private?

Do you propose that this institution shall operate as a psychopathic hospital, such as we have indicated above, or does your law prescribe that patients shall be detained only until they can be committed, without any reference to diagnosis or treatment?

If you will give us some idea of what you and your people are thinking about, and some idea what your present city hospital is and its arrangement, perhaps we can hit on a good plan; but if we were in your place we would try pretty hard to fight away from the purely detention character of the institution.

We shall be glad to hear from you about these things and promise you all the help we can possibly give you.

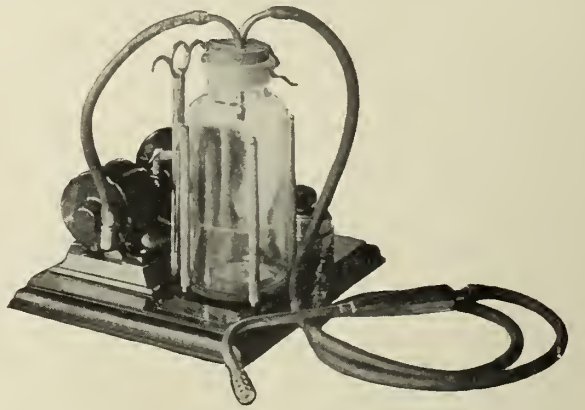
# NEW INSTRUMENTS AND APPLIANCES

VINCENZ MUELLER, Technical Editor.
GEO. W WALLERICH, Associate Editor.

### The Carmody Electric Aspirator

The aspiration of blood or secretions during operations has proven a time saver in the operating room, and several forms of aspirators, both hand operated and electrically driven, have recently been placed on the market.

The device illustrated has been built according to suggestions by Dr. E. F. Carmody, of Denver, and while it was originally made for the purpose of aspirating blood and mucous during tonsil or adenoid operations, it has proven of great value in abdominal or other major operations. The apparatus consists of a universal motor which will operate on either direct or alternating current and a positive suction pump. These two are connected by means of a coupling. Attached to the suction pump is a flexible



Carmody electric aspirator.

tube which connects to the aspirating bottle. A second tube with a metal aspirating tube is used for carrying off the secretions. The apparatus is of compact form, occupying a space but 8 inches square.

The device should prove practical in the operating room on account of its having few working parts to get out of order. There are no belts to break or stretch and no leather packings in the pump to be replaced. The pump is of novel construction in so far as there are no sliding valves or springs. A continuous suction is produced so that the field may be quickly cleared by the assistant without the use of sponges. The apparatus is also suitable for sinus drainage, so that it will find a further place of usefulness in the hands of the nose and throat operator.

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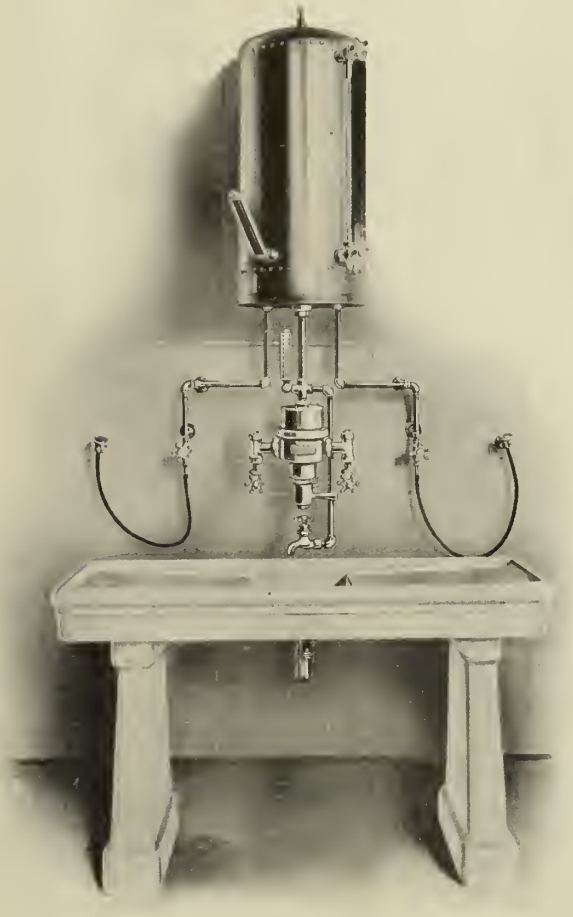
### Effective Thermostatic Water Controller

The apparatus illustrated here will be found of interest to those who have charge of maternity hospitals and kindred institutions where successful care of infants requires careful handling of the bath treatment.

The illustration represents an equipment consisting of

a new-born infants' bath, automatic water temperature regulator and gravity tank. The regulator or controller is of course the most important feature of the equipment. This controller, the latest model built by the Powers Regulator Co., has several features which further tend to make the Powers controller a safe device, which can be depended upon to regulate absolutely the water temperature. Serious, and in some cases even fatal, accidents from scalding have occurred, so anything which tends toward "safety first" either in the infant bath or in connection with hydrotherapeutic apparatus is worthy of careful consideration on the part of hospital authorities.

With the Powers controller it is impossible to use water at a temperature above what the controller is set for,



Powers thermostatic water controller.

and while adjustable, it is so constructed that even the adjustment cannot be changed so as to give a delivery of water at a temperature sufficiently high to be dangerous. In fact, once set to deliver water at the desired temperature, it will continue to deliver it at that temperature regardless of the varying conditions of pressure or temperature in the supply line. Should the cold water fail, for any reason, the controller will close immediately against the hot water, thereby safeguarding the patient.

Used in connection with the baby bath there is a further precaution, since the sprays are fed from a gravity tank, precluding any possibility of excessive pressure.

In hydrotherapeutic treatment much depends on the exactness in following the physicians' precautions as to water temperature, and this important part of the details should not be left to the more or less irregular attention that is given by a hand-operated apparatus.

### The Wullyamoz Horizontal Fluoroscope

The use of the fluoroscope for the location of foreign bodies, studying the peristaltic action of the intestines and stomach, lungs, heart, etc., has been greatly increased during recent years. Both in America and Europe new designs of apparatus have been developed to meet the requirements for this class of work. Several types of American-made apparatus have been described in these columns.

The apparatus here shown is manufactured in Bern, Switzerland, and has many features which are worthy of note. The high-tension wires which in other apparatus carry the current from the x-ray generator to the table as a rule are in the operator's or assistant's way to some extent. This new apparatus does away with all exposed high-tension wires, as the entire generating plant, controlling devices and table have been assembled in one unit, according to the suggestions of Dr. Wullyamoz.

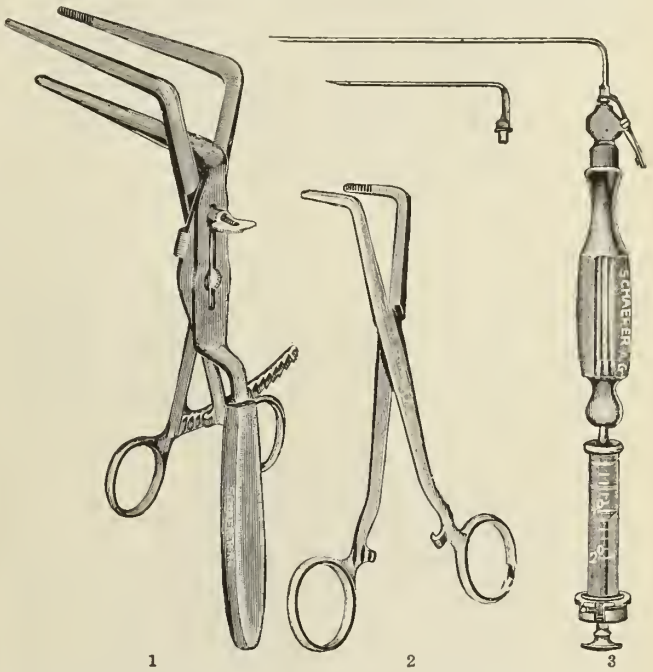



Fig. 1. Three-bladed dilating forceps to facilitate extraction of foreign bodies.
Fig. 2. Right-angle forceps for removing embedded foreign bodies.
Fig. 3. Syringe and needle for producing local anesthesia.

The table proper is built of wood, which, of course, offers good insulation and prevents the leakage of current to patient or operator. At the head of the table, mounted on a shelf, is the induction coil. At the opposite end an improved form of mercury turbine interrupter with a synchronous motor (when operated on alternating current). Just above the coil is a controlling panel adjusted at an angle of about 45 degrees. This panel contains the rheostat for controlling the mercury interrupter, rheostat for controlling the supply current, ammeter and milliamperemeter. A freely moving carriage is provided for suspending the x-ray tube. In this manner the tube may easily be moved so that any part of the patient, from head to foot, may be examined with the fluoroscope. Dr. Wullyamoz has also designed several instruments and an improved form of fluoroscopic screen with folder. Three of these instruments are illustrated. The syringe, Fig. 3, is used for the purpose of producing local anesthesia during the extraction of foreign bodies; and three tube canulæ of different sizes, and the handle and record injection syringe go to complete the instrument.

The canula can also be used as a probe in locating the

foreign bodies, for puncturing abscesses, etc. Fig. 1 shows a three-bladed dilating forceps for foreign bodies; Fig. 2 a right angle forceps designed for removing particles which are deeply imbedded.

The fluoroscope has been designed so as to make it collapsible, and it can be strapped to the operator's head.

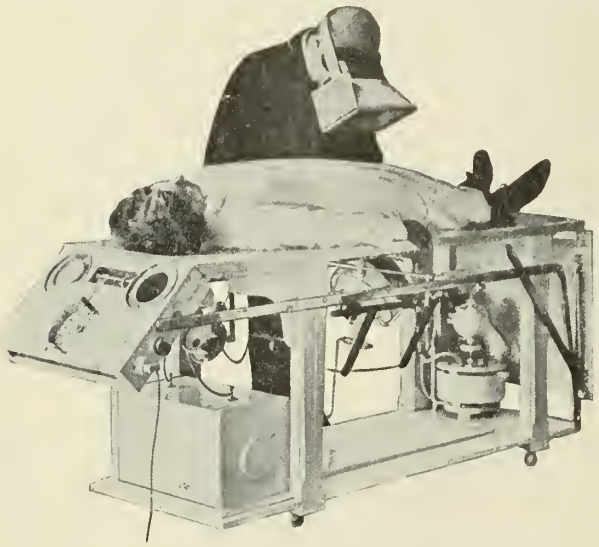


Fig. 4. The Wullyamoz horizontal fluoroscope.

This leaves both hands free for the handling of the instruments. The combination seems to have many points of merit, since an apparatus of this kind can be moved from one part of a hospital to another. As the amount of current required is small, attachment can be made to an ordinary lighting fixture socket.

### A Treatment Stand for the Coolidge Tube

With the advent of the Coolidge x-ray tube, capable of producing a ray of definite strength and penetration, and unvarying in its power from day to day, treatments generally classed as "deep" roentgentherapy have received a decided impetus.

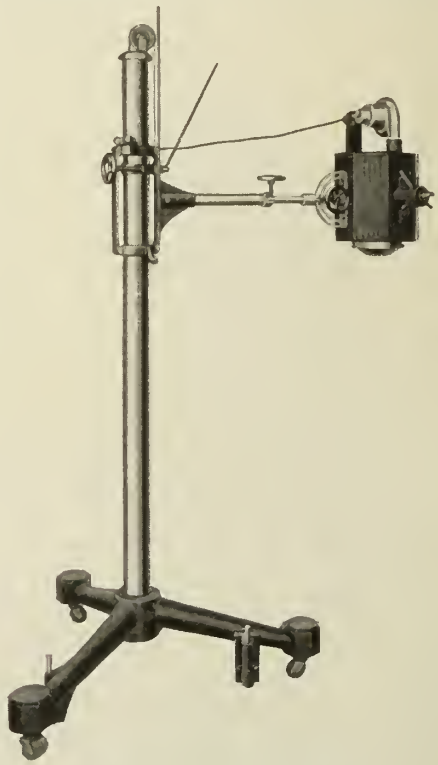
The chief barrier to roentgentherapy is the skin. Emanations from an x-ray tube consist of a bundle of rays of various degrees of strength, from the hardest, most penetrating rays to the softer, secondary ones. In "deep" roentgentherapy it is necessary to concentrate the hardest rays, and in some way diffuse the softer rays in order that the skin may not be affected to any dangerous extent. When treatments of considerable length are indicated, it is also necessary to use the so-called "cross-fire irradiation" method, which consists of subjecting the part under treatment to the roentgen ray through several different ports of entry, thus lessening the damage to the skin at any one point.

The Coolidge tube treatment stand has been designed with the above features foremost in the mind of the manufacturer. The base consists of a substantial casting, finished in hand-rubbed black enamel. Its size and weight are sufficient to make tipping over an impossibility. Efficient foot locks prevent movement of stand when once placed in position.

The tube column is of novel construction. Ball-bearing rollers prevent binding in any position, and the pulley at the top of the column, inside which the counterweight travels, is also ball-bearing and rotates on a ring of balls. A clamp on the sliding head is so arranged that it grasps the upright securely, and at the same time lifts the ball-bearing from the tube. This procedure does not injure the tube, nor does it put any extra strain on the bearings.

The tube box is constructed of kiln-dried wood, and is mahogany finished. Its octagonal shape brings the walls close to the tube, and makes it easy to handle. The box is hinged, and the tube is easily placed in position.

In order that the tube may be operated for a long period of time without overheating, an arrangement has been perfected which consists of a blower, mounted on top of the box. This is operated by a universal type of motor, and may be used on either direct or alternating current. The



Treatment stand for Coolidge tube.

air is forced around the tube and out through an opening in the opposite side of the cover. This opening is amply protected.

Special aluminum filters and treatment cones are included in the equipment of this stand. The filters are specially made for work of this kind, and are of one, two, and three millimeters thickness. They are made of almost pure aluminum. The treatment cones are also specially adapted to "deep" roentgentherapy. Their construction is designed to prevent the secondary rays from passing the opening, by a lip on the inside, which effectually stops them and turns them aside.

Cross-fire irradiation may be accomplished from any angle, and the tube is placed as near as possible to the part under treatment, which is a distinct advantage in the concentration of the rays.

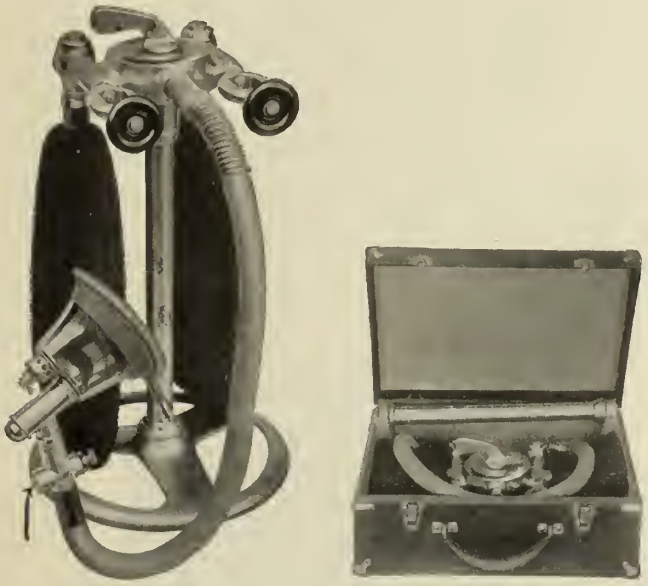
### The Clark Portable Nitrous Oxide and Oxygen Apparatus for Anesthesia

Eutocia by means of nitrous oxide and oxygen analgesia has gained such a strong foothold that there has been a universal demand for a light, simple outfit for administering the two gases, that could be conveniently carried to the bedside.

The outfit herewith illustrated has just been perfected,

the manufacturers, A. C. Clark & Co., of Chicago, having incorporated several new features, in addition to the fundamental principles which they use in their larger surgical equipment.

Simplicity of construction and simplicity of manipulation are two of the most prominent characteristics of the outfit. The flow of the two gases, nitrous oxide and



Clark baby gas apparatus. At left it is shown assembled; at right, packed in case.

oxygen, is controlled by one handle, so that either of the gases can be administered in its pure state or combined in any desired proportion by a single turn to the right or left. All superfluous valves are eliminated, automatic arrangements supplanting them.

The mixing chamber is the most important feature of the outfit, being developed to effect a thorough interpenetration and expansion of the gases, the Clark people having discovered that the greater the expansion and the more thorough the mixture, the more intensified is the action of the gases and the more efficient and tranquil is the analgesia or anesthesia. In this mixing chamber the gases are "rubbed" together three different times. The dial and one handle control are mounted on the mixing chamber.

The manufacturers maintain that every nitrous oxide and oxygen apparatus should have two bags, an individual bag for nitrous oxide, and one for oxygen, so that at no time can the oxygen become contaminated with nitrous oxide or carbon dioxide, and the oxygen will at all times be 100% pure for emergency and definite mixtures. In obstetrics this is important, as it is often necessary to administer pure oxygen to the baby through the mother.

The pure oxygen, with this two-bag arrangement, can be administered instantaneously by a slight shift of the one handle control.

The automatic feeder (indicated by the arrow in the cut) is another new creation by which the patient can self-administer the gases and automatically shut them off. This is especially important in obstetrics, as it does not require the attendance of an operator throughout the period of labor. By pressing the plunger with finger the patient releases the gases, and releasing the finger the plunger springs back and automatically shuts off the supply. Another big advantage is that the tube is always filled with gases, thereby conserving the amount and providing immediate supply to the patient, which is very important, since the pains generally advance quickly.

The outfit holds one cylinder of nitrous oxide and one cylinder of oxygen. When a cylinder is taken off for changing purposes, a heavy automatic valve springs shut, so that the gases in the bags or in the other cylinder cannot escape.

The portable Clark gas outfit is constructed mostly of aluminum and pure gum rubber parts and either the face or nasal inhaler is supplied.

Its complete weight is only 10 pounds. The case to enclose it measures 6x12x16 inches, and the weight of outfit and case is 15 pounds.

### The Halverson Electric Instrument Sterilizer

Instrument sterilizers which are heated by gas have nothing to prevent them from becoming injured or ruined when they are allowed to run dry while they are in use. Some of the electrically heated sterilizers are supplied with safety fuses of fusible metal which overcomes accidental burning out. The sterilizer illustrated here, however, is equipped with a contact plug, which automatically breaks the contact and shuts off the current as soon as the water in the receptacle is exhausted. An additional safeguard is a small red signal light which is placed out of the way on the bottom as a silent reminder that the current is on. The tray on which the instruments are placed is lifted and held up automatically when the lid is raised and consequently both hands are free to work with. The tray with the instruments on it can, however, be lifted out and taken to the operating room if this should be desired.

The manufacturers state that boiling water can be had in eight minutes and that the apparatus consumes less

Halverson electrically heated instrument sterilizer.

current than other electrically heated sterilizers, for the reason that three heats are provided. After the water has been brought to a boiling point it can be maintained at that temperature by the expenditure of a small amount of current. The handles are placed on each side of the lid and out of reach of escaping steam. The sterilizer is made in three sizes and can be attached to the 110-volt current, either direct or alternating.

Construction work has been begun on Pavilion No. 2, also on a hospital building at the State Sanatorium for Tuberculosis, Norton, Kas. Plans are being made for a more modern sewage disposal plant at this institution.

# THE HOSPITAL KITCHEN

Any questions regarding equipment or other matters connected with the kitchen and dependent departments of food storage and service will be answered in this department. Address communications to The Modern Hospital, Kitchen Department, Metropolitan Building, St. Louis.

### Butter Cutters

The economy of using a butter-cutting machine instead of cutting the portions by hand is so obvious that it hardly requires discussion. A pound package of butter can be divided into a given number of even pieces of the same thickness and area only by the use of cutting wires set so as to give the desired result.

The wastage of butter is a very serious item and can only be obviated by serving a uniform pat of a size sufficient to satisfy the average consumer.

When butter is purchased in packages a brick can be set on a platform and four cutting wires forced through it longitudinally to make four parts, the necessary number of wires being forced through it horizontally to divide it into from 24 to 48 or even more pats. There are machines on the market with and without mechanism to accomplish this, but no mechanism is really necessary and no increase in speed can be attained by it.

It is in the case of tub butter, which, being cheaper than the package variety, is more desirable where quantities are used, that the question of making the saving by correct cutting comes in, and the most all-round useful machine is the one which will either take package butter and cut that or take any portion of a tub and cut that.

There is a machine which takes the entire tub of butter and cuts it accurately, and this machine can be used where an entire tub is used at once, with some saving of time, although taking up a good deal of space.

It stands to reason that in order to obtain square pats the mold in which the butter is placed before cutting must have straight sides, and that a cylindrically-shaped mold will have different sized pieces cut from the inside and the outside of the cake, so that if even-sized pats are desired this type of machine is to be avoided.

There is a butter cutter on the market in which the mold is of the size necessary to take an ordinary creamery package, or if tub butter is used, the mould can be filled with butter, thus making a cake the same as a creamery package. Owing to its suitability for both tub and creamery package butter a cutter of this type would seem to be most suitable for general utility purposes.

### Food Wagons

Food wagons to convey the food from the main kitchen to the ward serving rooms are subject to rough and careless handling, but owing to the weight of the load it is not practical to use a heavily built wagon, and lightness and strength, combined with protection from bumps and careless handling, together with easy and durable running gear, are the things which must be taken care of.

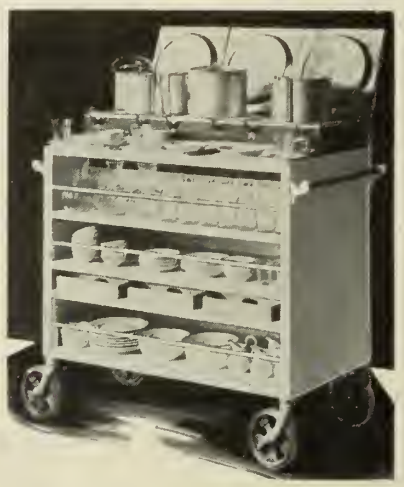
The body of the wagon should be insulated everywhere, except the sliding doors, to keep in the heat, and this object is best attained in a body built of two rigid sheets of metal on an angle iron frame; the joints should all be welded and sheets of asbestos packing used for insulation. As various things have to be carried on the top of the wagon the top must have a rail around it, and in the best modern types of wagon this is welded at all the joints so that breakage is practically impossible.

In order to protect the door jambs and walls of the hospital from injury it is always advisable to cover the corners of the body with thick rubber cushions, which, together with rubber terminals on the handles, give ample protection from careless bumping.

The best running gear is the auto axle with double ball bearings on the wheels and ball races on the stems, which insures the easiest possible running and greatest durability.

Food wagons built on approximately the above specifications are giving excellent service.

It is possible to place electric heating units in the food wagons, which can be connected to a plug at either end of the journey, thus ensuring the food being kept hot; but as in practice the food is placed in steam tables in the serving room before being served, this refinement is hardly necessary except possibly where a steam table is not available where the serving is to be done.



Type of food wagon in use at Ford Hospital, Detroit, Mich.

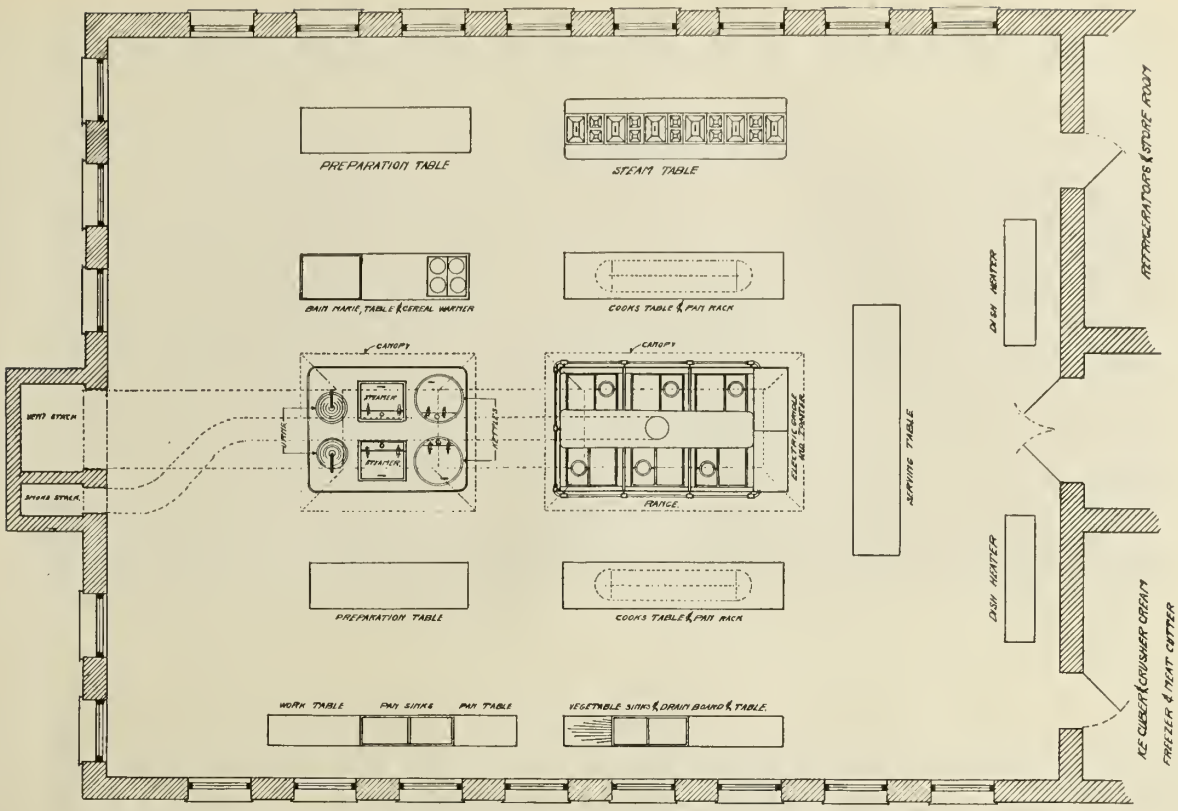
The latest thing in food wagons is illustrated above. These have been put in use in the Ford Hospital, at Detroit, Mich. The top of this new wagon contains what is practically a fireless cooker, containing three holes for single, double and triple aluminum receptacles, which are placed in well insulated holes with insulated lids, thus insuring the retention of temperature. The lower shelves of the wagon are open on one side and are available for plates, bottles, etc.

With a wagon of this kind the food can be served direct to the patient from the wagon piping hot, and in many instances these wagons will doubtless fill a want.

### Kitchen Equipment Plan for a 300 to 350-Bed Hospital.

BY P. B. SCHWEIKERT

The plan shown herewith shows a kitchen equipment of ample capacity for a 300 to 350-bed hospital and the necessary help connected with it. It is so arranged that all the equipment is sufficiently far away from the walls to allow for absolute cleanliness.




Plan of kitchen equipment for a hospital of 300 to 350 beds. Designed for THE MODERN HOSPITAL by P. B. Schweikert.

The room shown in the plan would have to be not less than 48x60 feet, and the vents should have an area of not less than 20 square feet, with a smoke stack with an area of 4 square feet.

In this plan the room containing the ice cuber and crusher, ice cream freezer, vegetable peeler and meat chopper is not shown, as this was shown in detail in the plan in the September issue.

The center range shown is 12½ feet by 8 feet and is covered by a canopy. At one end an electrically heated griddle and toaster is shown, which is advisable where the cost of electricity is low, but can be equally well replaced by a gas-heated appliance. These ranges should be of the heaviest type.

For the service of the cooks, a cooks' table with pan rack over it is provided at each side of the range and a serving table faces the dish heaters located on each of the exit doors, which is wide enough to allow the easy passage of the food wagons.

The steam work is taken care of by two 60-gallon steam-jacketed stock kettles and two four-bushel steamers. Back of these two are two 30-gallon institution urns. Over all these appliances is a canopy connected to the vent duct from the ranges and carried to the vent stack.

The institution urns are suggested on the presumption that the coffee service will be handled by coffee pots loaded on food wagons. Should a cup service be necessary, these urns would be omitted and a battery of urns installed at the other end of the room close to the door. In fact, where the dining rooms for the staff are close to the kitchen, a supplementary battery of urns for this service will be found useful.

On one side of the steam apparatus a preparation table is provided and ample sink accommodations for pans and vegetables. The service is taken care of by a 14-foot steam table, a bain marie, and a cereal cooker.

The floor spaces between the various appliances are such as to give ample room for working, without being so large as to cause unnecessary steps.

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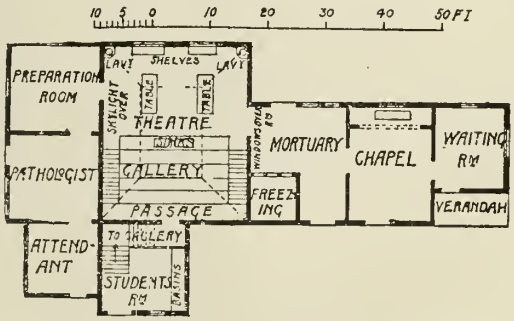
### Pathological Block of Adelaide Hospital of South Australia

This latest addition provides the Adelaide Hospital with a complete department for pathological work. The post-mortem theater contains two tables and has accommodations for 58 students. The walls of this large room and those of the mortuary and chapel are lined to the height




Adelaide Hospital, pathological block. Ground plan.

of six feet with white tiles, above which is a hard cement. On one side of the theater is the mortuary, with a freezing chamber for nine bodies, a mortuary chapel and waiting room; on the other is situated the pathologists' laboratory, with the attendants' room and a preparation room adjacent to it.

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### A Definition

"Pa," asked Johnnie, "what is a pathologist?"

"He's a man who lays out paths in the park and elsewhere, my boy—now don't bother papa any more; he's busy."—The Medical Pickwick.

The Kansas City General Hospital.

## AN EXAMPLE FOR SOUTHERN HOSPITALS

### Kansas City General Hospital Finds Solution for the Problem of Segregating Colored Patients

The story of what is known as the colored department of the Kansas City General Hospital at the present time, superintended, supervised, nursed and attended by a staff of colored physicians, surgeons and nurses, dates back for its beginning to the year 1908.

In October of that year the new general hospital was finished and ready for occupancy. The mayor of the city and the hospital board, being strong believers in race segregation, insisted that the colored patients of the hospital be kept in the old building. This was done, the white patients being moved to the new hospital. Accordingly, for the next couple of years, the colored patients were nursed by white nurses in training under a white supervisor, and had the services of the same physicians and surgeons who were on the staff of the general hospital.

There was in the city a fairly able colored physician who was quick to see the advantage to his race which a distinct negro hospital would give, and he constantly urged everyone of influence to make the institution colored in all departments.

About the year 1910 the hospital and health board appointed a staff for duty for the colored department over the colored physicians and surgeons, who were called assistant attending physicians. These physicians came conjointly with the white staff and began gradually to get into the work. They assisted in operations, and often operated in cases where the chief of staff would allow it.

The next step was the beginning of the training school for colored nurses. In October, 1911, the first ones came. There were employed in addition to the first five pupil nurses two graduate colored nurses. These graduate nurses were shortly given authority as supervisors, and as colored pupil nurses became proficient, the white nurses were withdrawn.

The next step was the appointment of colored interns, instead of white interns, who formerly came to this department from the general hospital, each one serving three months; young negro physicians came from schools in the east and proved themselves able men. This was about as far as the matter had progressed, and no one seemed to care very much whether the final change was made or not. Early in 1914 there was appointed to the hospital and health board, Mr. Thomas M. Finn, now the president, who was strongly in favor of giving the colored people a chance to run their own hospital, so in October of that year, a colored superintendent was appointed, Dr. William J. Thompkins, and a colored supervising nurse, Mary K. Hampton. There were at this time seventeen pupil nurses and two post-graduate nurses. There were six interns and a well organized staff of colored physicians looking after the medical and surgical diseases as well as some of the specialties. The members of the staff at the general hospital served each a period of two months at the old hospital, and supervised and instructed the colored staff in their work. The nursing department is under the direction of Miss Mary I. Bustard, our superintendent of nurses, and the nurses in the colored training school have the same course of didactic and practical training which is given the white nurses in this institution. They are also given a diploma at the completion of their three years' course.

The old building has been overhauled, the plumbing renewed, it has been repainted, and a separate home for colored nurses has been provided. Further work is contemplated in the way of improving conditions by providing sun porches for the tuberculosis cases. The work in all departments has proceeded as harmoniously, economically and efficiently as before the change, and as far as we are able to determine, the arrangement is highly satisfactory to both races.

GEORGE P. PIPKIN, M. D.,
Supt. Kansas City General Hospital.

### New York Hospitals to Use Motors Only

Motor ambulances have recently replaced the horse-drawn vehicles at all of the city hospitals in Manhattan and the Bronx, New York City, including the Bellevue, Gouverneur, Harlem and Fordham institutions. Efficiency and economy are given as the objects of the change. It is expected that territory may be covered more speedily with the automobile ambulances and that fewer ambulances and employees will be needed.

Fig. 1. Four-cot ambulance sent to the Italian army. Note rear arrangement and closet in side.

## NEW AMBULANCE FOR THE WAR

### American Builders Are Sending a Four-Patient, Ten-Passenger Car to Italy

The outbreak of the European war found all the belligerents, excepting Germany, poorly prepared; and even Germany, with her maximum of preparedness, could not have realized the huge proportions of the war to come. Men have been killed in hundreds of thousands, and wounded in even greater numbers in a single "drive."

War offices are notoriously prone to think in terms of fighting, and as we found in our own pigmy Spanish-American war, the care of the wounded, and the hygiene and sanitation of the line, seems always to be forgotten or ignored. So it was in Europe, and one of the first things that had to be organized, almost out of nothing, was a scheme for gathering in and caring for the wounded.

Fig. 2. Arranged for two recumbent patients and five sitting patients. Note lavatory in front.

To the British war office this was so serious a matter that a prize of $5,000 was offered for the best design of a field ambulance.

Italy seems to have gone about the problem differently, and in connection with other methods, gave orders in this country for field ambulances. The car pictured in the illustration was one of those purchased.

The ambulance has solid wooden panels. It is 8 feet 2 inches long back of the driver's seat, and 5 feet 8 inches wide inside; the height in the center of the passageway is 5 feet 9 inches. There are four permanent glass windows on each side; also two ventilating blinds on each side. At the rear there are two ventilating blinds and two doors; these doors drop and make a support when loading the upper stretcher. The passageway at the rear is left open, but is supplied with a spring roller curtain, working in grooves, so that in stormy weather it may be closed to the bottom or closed to any height desired. Beneath the two doors there is a locker space, which is opened from the outside of the body. The rear is also furnished with a step, which folds. The front of the body is supplied with a rain-vision wind-shield and has fore doors. The driver's seat is upholstered with spring cushion and lazy-back of leather and is capable of carrying two people.

Fig. 3. Arrangement for getting patient into upper berth.

The interior of this forward part is finished in the usual manner of vehicles of this kind. The hood, extending out over the driver's seat, is made of considerable depth so that there is space for lockers. There are three lockers in this hood; one in the front and two on the sides.

The interior of the body is so arranged that it will carry four stretchers and allow seating for physician and one nurse. Two patients can be accommodated on stretchers, and five persons in a sitting position, or ten people in the sitting position if stretchers are not used. When stretchers are not in use this platform is raised, and forms the seat, and the space back of the seat is arranged so that stretchers not in use can be carried. When this platform is in position for the stretcher the stretcher is simply pushed in from the rear.

The upper stretchers are carried on a pair of adjustable

skids. When the upper stretchers are not in use they are carried on the side of the ambulance, entirely out of the way, so that they do not interfere with the seating of the passengers. The stretchers used are the regulation army stretchers.

There is one locker under each of the lower berths, which open from the aisle. In the front, beside the driver on the right-hand side, is arranged a compartment which has a hot water tank and cold water tank. The hot water is heated from the exhaust. There is a drop glass immediately back of the driver's seat in the center of the body. In the center of the aisle there is a seat for the physician or nurse. This seat forms the back, or the door, which closes the compartment in which the water basin is carried. This compartment, back of the seat, contains faucets and a basin, also a waste pipe. When this basin is turned up the water drops in the waste pipe and is carried through the bottom of the body to the ground.

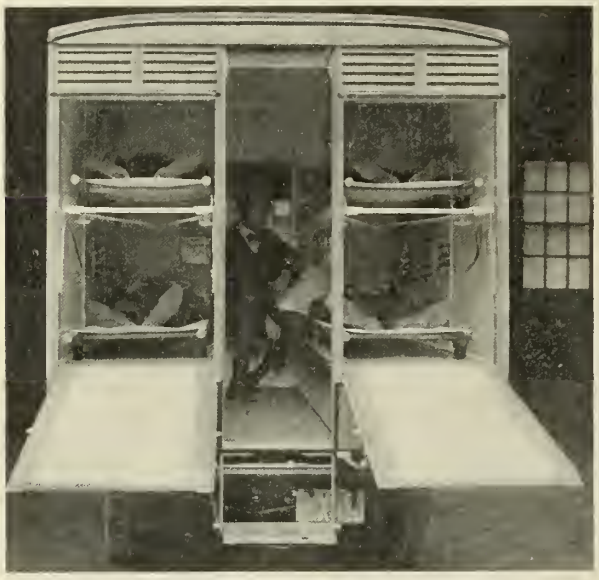

Fig. 4. Arranged for four bed patients and nurse.

On the left-hand side of the front is one large locker that can be divided into compartments to suit requirements. There are three electric dome lights, one in the forward part over the driver and two in the interior of the ambulance; and four electric lights on each side, arranged in the sides of the body so as to give light in each of the berths when occupied. Two electric fans can be placed in a position where they will properly cool each of the berths. One Pyrene fire extinguisher is provided also, and two fireman lanterns to be placed outside for use at night in field work. The lanterns are oil-burning.

The interior of the ambulance is metal-finished, and the floor is covered with linoleum.

The body is placed on a 30 horse power four-cylinder White chassis. It has electric lights and self starter. The fans and electric lights in the body are furnished with power from the battery of the chassis.

### Germans to Establish More Hospitals in Belgium

German physicians and officers have recently completed a tour of Belgian cities for the purpose of inspecting municipal and other buildings that would lend themselves to conversion into large hospitals. Complete equipment has been ordered from Germany.

## HINTS FOR HOSPITAL SUPERINTENDENTS.

Have good coffee in your hospital. There is a good deal in starting out with coffee of a good grade and blend, but the best coffee ever grown can be easily spoiled in the making.

How many superintendents have time, day in and day out, through the year, to go to places, take plenty of recreation and get away from the institution for several hours a day? Show me a hospital superintendent who is on the jump all day, late and early, and I will show you a superintendent who is not giving the hospital the best service possible.

Learn to delegate work; keep other people busy. You should know what your kitchen is doing, but that doesn't mean you should shell peas for dinner; you should see that your house is kept clean, but that doesn't mean you should wield a mop.

If the general of an army got into the trenches, who would do the thinking and planning? It is the orchestra leader's business to wield the baton that calls forth melody, harmony, rhythm and tone, but he can't afford to play the piccolo.

It may not be necessary or desirable to work under written or printed rules for the superintendent or the medical staff of the hospital. But it is certainly imperative to have definite rules, drawn out in the last detail for the guidance of interns and nurses, and rules of technic for the medical and surgical work. The superintendent of the hospital is the best judge of rules for interns, and each institution must be a law unto itself concerning these rules; but they should be specific and reasonable. The head of the training school is the best judge of rules for the conduct of pupil nurses, but a set of these rules should be inaugurated if they are not working now.

The best way to get rules of technic for the various services in the hospital is for the superintendent to make a skeleton form for each service, making them as he thinks they ought to be, and then put them up to the medical staff of each service for them to pick to pieces and finally adopt. These rules are the sheet anchor of the hospital insofar as its technic is concerned. A hospital without a definite and specific technic for doing things cannot have any kind of decent medical service, cannot train interns and nurses, and cannot get good results.

Take enough time off duty to get away from the job so you can take a bird's-eye view of it from a distance. The general of an army doesn't ride at the head of a regiment in a charge; he stands back on a hill somewhere with field glasses to survey the whole battle front. He would lose the fight if he gave his individual attention to details. Take walks, go to a ball game, take in the "movies." There will be moments when you can make little mental sketches of your hospital work; and you will see some things as they really are instead of as they have appeared to you while standing close beside them. Especially will you do well to think about your associates in the work: Are they doing their duty by the institution and to you? Are you doing exact justice to them? Are you always fair to them? Have you "got it in" for anyone, and is your attitude fair and generous? A walk in the park alone, with the sunshine, and the birds and flowers and Nature, will do wonders to oxidize the blood, carry off the waste products, including any little meannesses that may have infected you, and give you a fine, wholesome survey of the world, especially your part of it.

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